

Vol. VII

APRIL, 1905

No. 4

# THE AUTOMOBILE MAGAZINE

Price  
25 Cents



*Published by The Automobile Press, Angus Sinclair, Editor  
136 Liberty St., New York*

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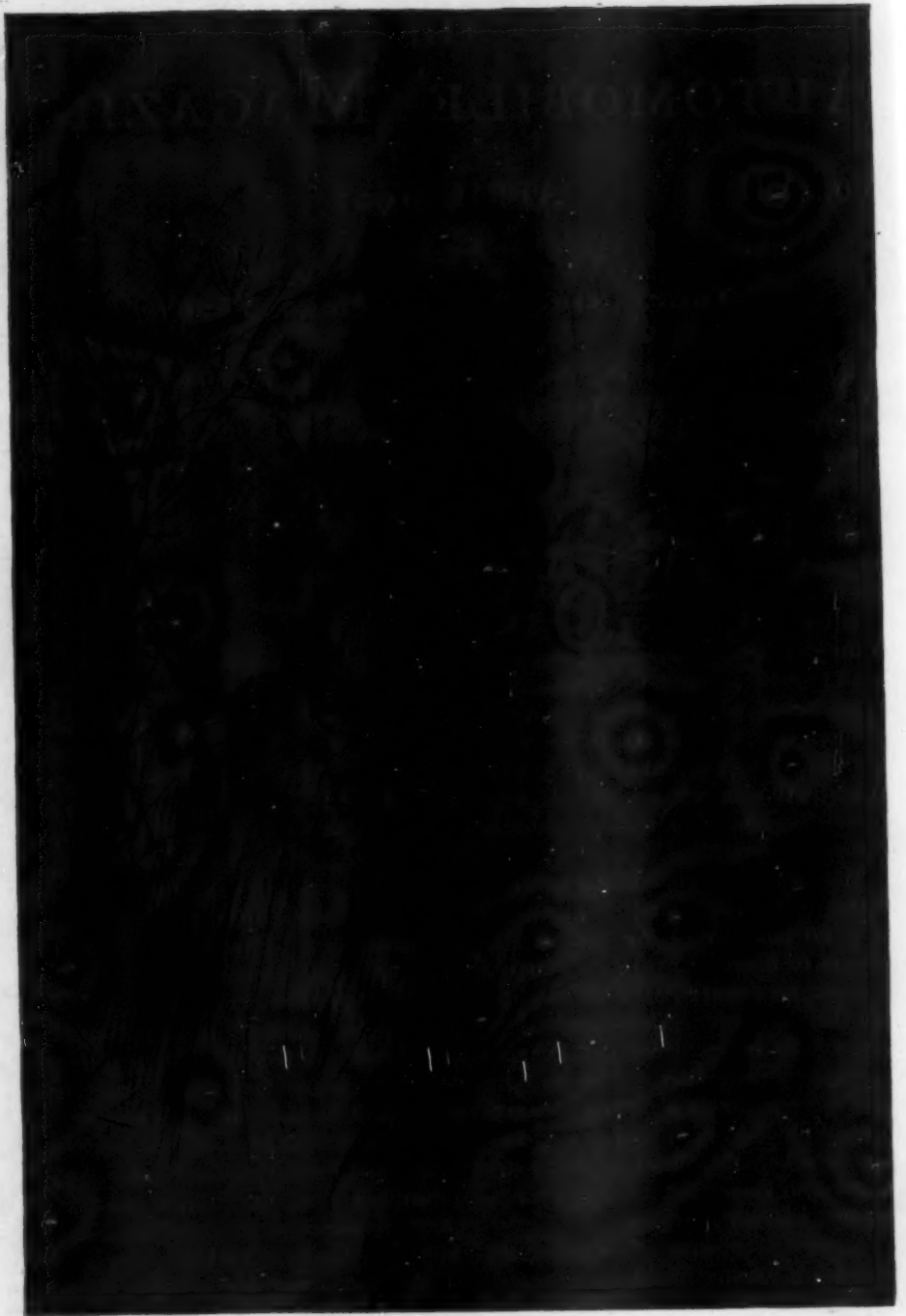
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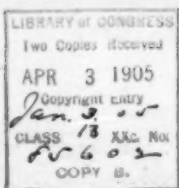
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## Tours and How to Make Them

*By Robert Bruce*

**W**HEN the warm days of spring are once more upon us, the snow all disappeared, and the south wind comes soft but strong with a wooing note, all true automobilists come more or less under the influence of the "touring fever." During the long and severe winter months, the northern motorist must of necessity take only short trips and confine his riding chiefly to the city if he wishes a passable way. In all probability the various automobile shows, national and local, and the southern tournaments absorb the major part of his thought and attention. But the springtime brings new life and ardor to his devotion. For the real automobilist must tour.

"Where shall I go?" is the question he must often ask himself and as often let it go unanswered, for the possible answers to it are many. This year the prospects for motor touring are brighter than they have ever been before. More cars will be in use, and the country traversed by the tourist will be not only wider in area, but of a more varied nature. With the opening of new routes have come better facilities, so that tourists need no longer fear to start upon a long and unfamiliar trip.

No country on earth offers better attractions or greater incentives to travel than does our own. It is not necessary to go to Europe, for within three hun-

dred miles of the metropolis are mountains and rivers, forests and lakes, not to mention the delights of the ocean at the Maine or Jersey coasts, and the delights of the Sound on the Connecticut shore. Whether the New Yorker has a month, a week or only a day to devote to touring, he will have no difficulty in finding some place that will furnish all the pleasure he could ask—with everything to delight the sense and to charm the eye.

If he seeks the mountains—and thinks the nearby Catskills not to his liking—there is all New England, except northern Maine and the extreme upper part of New Hampshire, that is fairly accessible. Go up through the Litchfield and Berkshire Hills, where excellent roads will be found and the air and scenery is of the best. Then cross the Green Mountains in Vermont and on to the White Mountains, where Mt. Washington stands—no longer unclimbed by the enthusiastic motorist. The view from Greylock is very fine, and one need not leave until he has climbed in his car to the summit. Then skirt the coast of Maine and run up to Bar Harbor. The return trip along the Atlantic coast and the cottage-dotted shore of the Sound will give the New Yorker a new lease of life and something good to dream about when winter's snows again render touring impossible.

Or follow up the Hudson River toward its source and get the spirit of Irving's "lordly" river. The region is well opened up for automobiles, and side trips may be made to Lake George and Lake Champlain without inconvenience. West of Schenectady the roads show but little improvement year by year, but they are fairly good and can be traveled with moderate success. Far better is the route through Buffalo, Erie, Cleveland and Toledo to Detroit, along the lake shore, but it deteriorates as it approaches Chicago.

South of New York, along the Atlantic seaboard, the way is open in good shape through Trenton, Philadelphia and Wilmington. It is less attractive toward Baltimore and Washington, and south of the last-named city the roads frequently offer more difficulties than joys to the tourist. Here and there are to be found limited districts like the Shenandoah Valley, parts of North Carolina and the Florida east coast, that are exceedingly attractive and not difficult of access. It is still best, however, to ship the car by rail or boat to these sections, rather than to risk impassable roads by taking a cross-country trip.

For the Chicago automobilist many delightful trips may be made in northern Illinois and southeastern Wisconsin to Milwaukee and the Wisconsin lakes—reached in part over the great Sheridan Road—and all of them are well worth a visit. California offers many delightful trips, and the fraternity of motorists in the "Golden State" is not small. Having ascended Mt. Lowe and Mt. Hamilton—crowned with the giant Lick Observatory—and seen the glorious Yosemite, one should make at least one tour through southern California, with its ranches of luscious fruit.

It is, however, within a radius of a hundred miles of New York, Boston,

Philadelphia, Cleveland and Buffalo that motoring has been longest established, and in these sections the tourist is sure of finding all the comforts and conveniences of motoring at his disposal. From Portland and Lowell on the north to Washington and Gettysburg at the south (broadly speaking) he can be usually quite confident of no very serious predicament. All through this section the roads are fairly good, and many are of the best, while repair shops and public garages are frequent. Still, there are sure to be some discomforts, no matter how well things are arranged.

"Rome was not built in a day," and the automobile has been in general use but a few years. If the tourist is forced to pass the night in a little country town he is lucky if he gets better than a second-rate hotel. Nor should he expect to find a fine garage, similar to the one on his private premises or in his home city. Instead there will perhaps be only a livery stable in which to shelter his valuable machine. While traveling through country that is remote from civilization the tourist may be annoyed by the gratuitous staring given him by the natives. If an accident chances to occur a crowd of idle onlookers may be expected to gather. With curious eyes they will watch the repairing operations and perhaps secretly hope it will prove impossible to fix.

But the motorist who at once lays aside all false pride is likely to get on best and gain the largest amount of enjoyment from his trip. The slight discomforts will seem small in retrospect when compared with the joys of getting away for a little time, at least, from the conventionalities of the ultra-fashionable set. The wisest plan is to make no attempt to keep in "the social whirl," but rather to get back to the simple life of Nature. For this reason it is best to avoid the popular summer resorts if one



REAL AMERICANS IN A REAL AMERICAN CAR, THE POPE TOLEDO

wishes to promote peace of mind and comfort of body.

Before starting on a tour the motorist has two essentials to think of if the trip is to be a success. He must have a suitable car and one in perfect condition. "Accidents" are sure enough to happen, but no sane man will venture on a long tour with a delapidated or outworn machine. The designers and builders of motor cars have outdone themselves in the new creations of this season. The tendency to make a light and still strong and serviceable machine has predominated. The touring car emphasizes these qualities, rather than that of speed alone. The ease and comfort of the riders and the strength and durability of the machine have been the ends in view. Space for an enlarged storage capacity for fuel, tools and luggage has been provided.

Having chosen the style of car—and

the prices for such vary from the machine made only for the millionaire to the relatively cheap one—the motorist considers the question of an outfit. This is apt to prove a puzzling proposition. Nowhere can an entire outfit be bought outright, and yet there is no pleasure in a tour without one. Experienced motorists are usually found to make up their individual outfits with things suited to their tastes, or what long experience has proved invaluable. The novice can gain many good ideas as to the new things in the way of clothing and equipment from the advertising pages of the automobile publications, and even the weekly and daily newspapers. Illustrated catalogues are issued by nearly all outfitting houses and may be had upon request.

Having secured the machine and provided the outfit needed for the particular trip to be made, the owner should

look at its working condition. One essential is to use plenty of oil, except on the cylinders, where an excess is apt to cause gumming and fouling. A new machine is likely to take more oil than one that has been in use for some time, and the motorist will make no mistake to use plenty of lubricant. The engine and running gear should be carefully looked to, or the car is likely to suffer. So trivial a thing as a misplaced bolt or a nut unscrewed may cause long and annoying delays, particularly if they support detachable parts. Always test the brakes and steering gear before starting out on each day's trip, and look well to the gasoline, water and supply mechanism, for these often become clogged with dirt and other waste matter, which will seriously retard even the best motor. It is also wise to frequently clean the bottom of the storage tanks.

There are certain tools that are necessary concomitants of all well-regulated motor cars. While the space on most machines that can be devoted to tools and accessories is limited, there should always be a place for these tools, which are indispensable: a little pipe wrench, two gas-pipe pliers, a big and a little screw-driver, two flat-nosed pliers, a little hammer, two wire cutters, a large jack knife, one flat, one round and one three-cornered file, a coil of soft iron wire, some sticky tape, a cold chisel, a monkey wrench and plenty of extra bolts and nuts.

Then, too, there are certain features that are peculiar to the various types of machines. It is advisable for the buyer to get particular directions of this nature from the manufacturer or dealer on purchasing the machine.

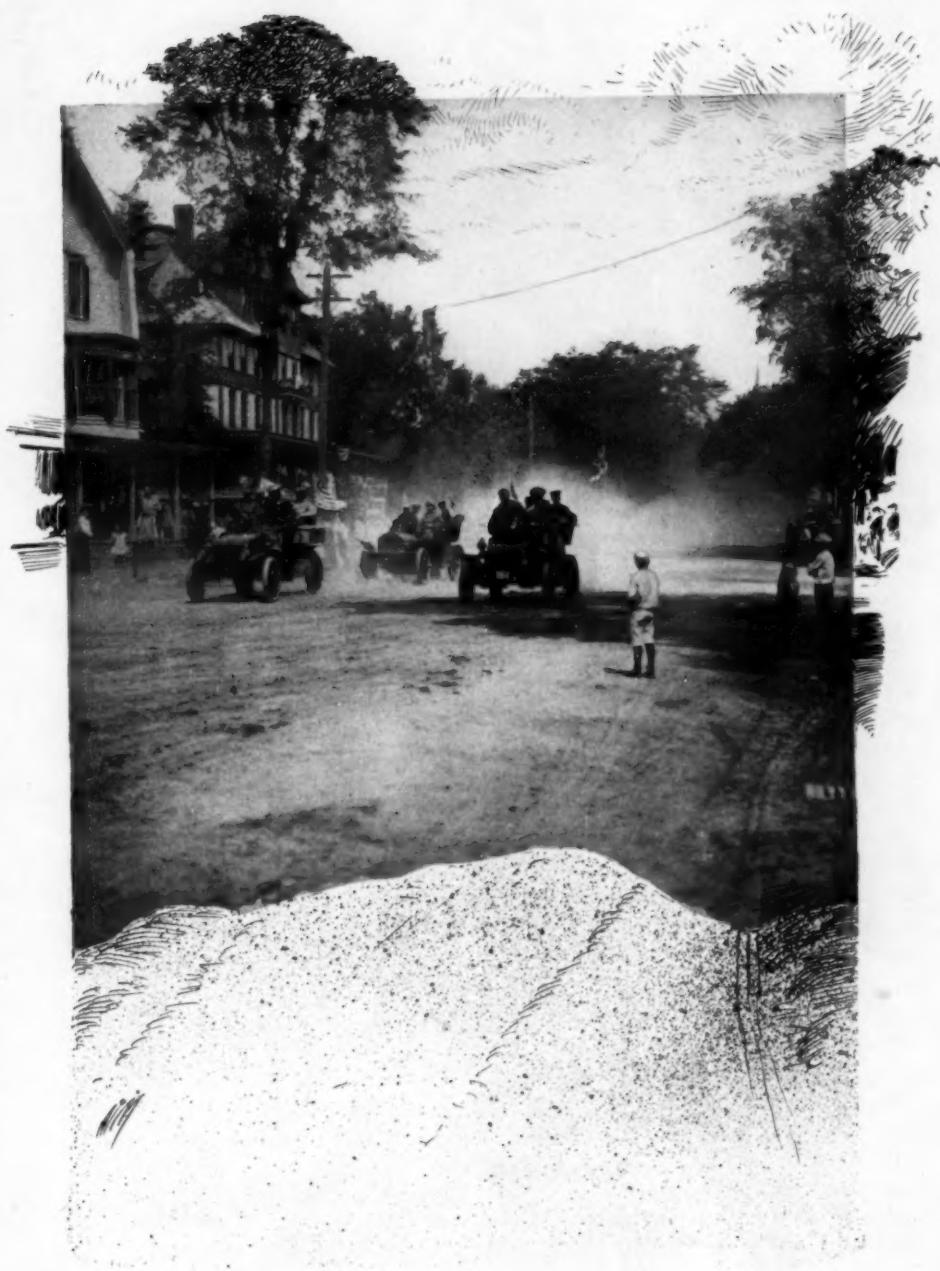
With his car properly equipped and with a general idea in his mind as to the desired destination, the touring party is ready for more definite information as to the country to be traversed. If it is

the first trip in that direction, the motorist is generally glad of any helpful hints. If possible take along on the trip some friend who is familiar with the way. The suggestions that he can offer as to the proper hotels and the location of repair shops and garages will be well worth while.

If he knows well the roads he is sure to be an almost indispensable companion, for in most country highways signboards are a minus quantity, and where the road suddenly forks into three or four lanes, the wayfaring motorist, though a wise man, is likely to err therein. The ordinary native in the country is not to be expected to know locations or directions of places more than a mile from his home, and no two ever agree as to the precise distance to the next town. Usually they will give you the distance, not from the spot where you chance to meet them, but from the place where they live, which may be two or three miles in either direction.

So, if you can possibly get a friend who knows the way, do so by all means. You will have frequent occasion to bless him and to thank your lucky star that you brought him with you on the trip. But if the friend is not to be had, then get a good road book and study it diligently before leaving home. It is a mistake to leave the gathering of this information until the journey has been begun. While it is best to take all the material along for handy reference in time of doubt, it is usually the case that so absorbed does the motorist's attention become in other things that he forgets to refer to the book at all. Each year, as automobiling progresses and becomes more generally popular, a vast amount of new data is passed down from one touring season to another.

But the motorist who is bent on any long trips, or who desires to visit sections of country that automobilists but





little frequent, will doubtless find that road books and maps are of only secondary value. He will often be thrown upon his own ingenuity and must find out things for himself. It is no wonder if much of this experience is not appreciated highly at the time. But the practical knowledge obtained of a new country and its conditions will be of the greatest value in future years. It would be highly appreciated by the motoring fraternity if any would-be explorer would share with his brothers of the motor the information he has gathered during a summer's tour.

To many motorists, not averse to "roughing it," the "camping out" idea appeals with irresistible fascination. This has many decided advantages. Hotels at which to spend the night are not always at convenient distances, and they often prove to be anything but comfortable when reached. It is no longer an impractical scheme to make of the motor car a nomadic hotel for a week or for a month. If the party is not too fastidious a camp by the roadside requires but a small number of articles to make it both pleasant and healthful. The soldier can carry his entire camp outfit on his back, together with his weapons, and no motor car on the market is too small to carry all that is needed for the passenger's comfort in camp.

It is really imperative that all breakables be avoided. A large amount of broken glass and crockery is a poor thing to take on such a tour. Anything that can as well be purchased at some country store should not be given space, unless one anticipates a trip into "unknown regions." By no means should articles that may cause serious destruction be carried. Two people can be well housed in a canvas tent of the military kind with a folding center pole. You will sleep well on a rubber-air mattress,

which is easily inflated, and can in the morning be rolled snugly to the side of a man's arm, requiring but a small space. No better protection has been devised against ground moisture.

With an air cushion for a pillow and an army blanket for bed covering the camper's bed outfit becomes complete. You will sleep easier if before going to bed you have tightly locked up your manipulating devices on your automobile, for then no one can take liberties with it while you sleep. A good revolver under your pillow may serve to calm your fears if you are timid, and there may be occasions when it will be a very handy little weapon to have beside you.

Provisions for breakfast may be carried in a basket, strapped to the rear end of the car, and they will be found much more convenient than to rely on some distant hotel for the morning meal. The usual basket provided in touring outfits is very ornate and sometimes more fitted to contain precious jewels than perishable provisions. But for practical service on a country trip a wicker basket of generous size is far better and less expensive. The hungry motorist will not care so much for the kind of basket as for the substantial contents inside and the way by which they are kept. Of course the car should have a rubber cover impervious to rain and dust and fitting closely at the corners.

As for cooking utensils, they should be of aluminum, as well as all the plates, knives, forks, etc., that are used. Groceries and spices may be conveniently packed in a wooden box, and so not become mixed with the other contents of the car. But if the tour is through a hunting and fishing region the chauffeur and passengers ought to plan to furnish most of the extra provisions by their own prowess.



It is a reasonable precaution also to take along a goodly supply of drugs, medicines and plasters, for accidents may at any time happen, and as doctors are not always handy it is well to provide against emergencies.

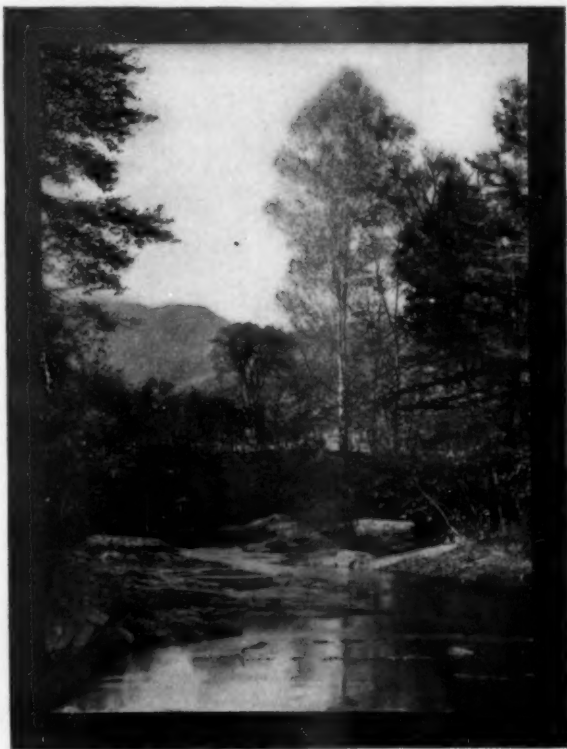
But the discomforts and slight annoyances of a trip are but a small part of it, and are the soonest forgotten. Too much cannot be made of the pleasures of such a trip when everything works out just right. The outdoor life, after the close confinement of the city; the change of scene, with its opportunities to feast upon the beauties of the outdoor world, the freedom from care—being your own master with your own machine, which knows no will but yours—surely are not these enough? The highest enthusiasm of the most ardent of motorists could scarcely ask for more.

#### Silence Is Golden

Times have changed since the days when the average owner of an automobile did not seriously object to the noise it made. Now he demands a silent car—silent, that is, by comparison with the thunderous, nerve-racking affairs which were only a short time ago the rule rather than the exception. The automobilist who gauges his pleasure by the volume of noise emitted from the muffler has not wholly passed away. Some extremists of this type will even cut out the muffler in order to give the public the full benefit of the exhaust from the engine, with the result that may readily be imagin-

ed. But they are in a decided minority, a minority which steadily decreases. It does not take any abnormal amount of discernment to see that the time is likely to come when people of this class will execute a *volte face* and go in for silence quite as strenuously as they formerly did for noise.

At the present time nearly all cars have undergone improvement in this



respect. Designers and makers have been quick to see that the public wanted quieter cars, and as they know full well that silent cars mean efficient cars, and that in following the present fashion they are pursuing the logical line of development, the progress made in this direction is not surprising. In minimizing noise power is conserved and used in propelling the vehicle, in-

stead of being wasted; for it has become an axiom that noise is power diverted from its proper use. Sensitive people like neither noise nor its concomitant, vibration. With them the highest possible praise of a gasoline car is to say that it is as quiet as a steam or an electric vehicle, and purchasers who have once experienced these qualities are never content to take a backward step and return to the old order of things.

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#### **Tires Need Considerable Care**

Pneumatic tires should be kept in a temperature of about 60 degrees in a dark place, and, if possible, out of a draught, and should never be exposed to the rays of the sun before they are used (the sun has not so much effect upon tires after use). Where these precautions are not taken the tires will lose their elasticity and become brittle. Small cracks will appear, which will gradually grow larger. Immediately after they have been used pneumatic tires should be cleaned from wet and mud, and cuts in the covers should be closed so as to prevent water getting in and rotting the canvas, which is the cause of many bursts.

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#### **Don't Overload Your Car**

After all an automobile is only like any other machine in many respects, and should be treated accordingly. It should be used with due regard to the work for which the manufacturers designed and built it. A light runabout is not a touring car, and is not, properly speaking, a four passenger vehicle. There is no doubt that the light car will stand up under a good deal of imposition, with proper care, but the wear and tear on the machinery is bound to be greater than when the car is used under normal conditions, and it should not occasion surprise if

more than usual attention and more frequent renewals are required. Then there is the extra passenger question. Almost any two-seated car can be fitted with an extra seat for the accommodation of one or two passengers more than the normal capacity of the vehicle, and no trouble will be experienced on smooth roads; but on rough or hilly roads the matter assumes a different aspect. The same springs cannot be made to carry four passengers with the comfort and safety with which they carry the two, for which alone they were planned and built, so the overloaded springs will leave most of the work of absorbing shocks to the tires, and as a natural result a rough journey may be expected. With a heavy car of the touring type it will, of course, be different, because the proportionate weight of the passengers is less, while the springs are larger and have a greater range of movement. Consequently if one wants to take out a couple of extra passengers in a light car, smooth and level roads should be chosen. If touring is to be done, or if it is desired to carry more than two passengers most of the time, a heavier type of vehicle should be used and no attempt made to overload a light car for the purpose.

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#### **Man Power vs. Horse Power**

The usual estimate made of the amount of power a man can develop is too high. The man's power is ordinarily given at one-sixth that of horse power, whereas, taking a day's work of ten hours, a man can really put out only about one-ninth of a horse power. For very short periods a strong man can develop possibly a horse power, but for such a period as even a minute a man who can develop three-fourths of a horse power is exceptional.

## Getting a Bargain

By Vincent R. Sammis

WITH the passing of the magical six weeks wherein the wise old ground hog took his final winter nap, the thoughts of almost all who love life in the open begin to turn motorward. About this time, as the up-to-date almanac doesn't but should say, look out for automobiles. This works both ways—look out for them if you want to own one, or even if you want to dodge one. I'll suppose that it is the first named horn of the dilemma which confronts you, and that, like most of us, you have a Mercedes longing chained down by a runabout bank account. In this event you will get the most for your money if you decide to purchase a second-hand car of good make rather than a new vehicle of lower price; due caution and circumspection in choosing the bargain being, of course, understood. Where the assistance of an unbiased expert can be called in, the purchaser may have an

easy mind; in default of this a *résumé* of some of the chief points on which a buyer should satisfy himself, which follow, may prove useful.

A trial trip will usually be demanded and accorded. This will give the opportunity for much valuable observation as to the condition of the car. Excessive noise from the gearing betrays wear, and the buyer should insist on examin-

ing this; a car need not necessarily be rejected on this account, because it is often as well for the novice to learn on the old and worn gearing, and put in a new one when *au fait* with it; the cost of which you will of course have to consider in valuing the car. It should be noted, however, that some cars wear out their gears fast, relatively to the other moving parts of the vehicle; or they may have been unduly worn by unskilful driving; while in other cars with very ample gear dimensions any serious deterioration thereof may indicate an amount of hard work that has affected the car throughout.

In live-axled cars the condition of the axle requires especial attention, and if the purchaser cannot have it dissected for his benefit, as is most likely he can not, it should be jacked up, and any looseness in the bearings tested by shaking the back wheels. If they are ball bearings, excessive play may be taken up, unless it is excessive enough to require new cups and cones, but the rebushing of plain bearings may be a more expensive job. Next, one of the back wheels should be blocked and the other rotated, at the same time grasping the propeller shaft. This will indicate roughly the extent to which the bevel gear and the differential is worn, and the shake in the universal joints of the shaft can be felt at the same time, as



also in the shaft of the bevel wheel where it enters the differential box.

It is seldom indeed that the back view of a live-axled car is taken without the eye being offended by the "splaying" of the rear wheels. Much of this is due to wear in the axle bearings, but in some light cars there is an evident sag in the axle sleeve. Where this is the case you would be wise to give that car a wide berth, as the increased and unnecessary side strain on badly splayed wheels is obviously very great, apart from any consideration of the weak construction thereby indicated.

The running of the engine will usually speak for itself; any knock or shake will make itself audible, especially if, with a two or more cylinder engine, it is run first on one cylinder only, then on another, by disconnecting one or the other of the high-tension wires. This test will often detect a looseness in the connecting rod or crankshaft bearings which would otherwise escape notice. Here, too, it may be worth while suggesting the use of a length of rubber tube (used as a stethoscope) to locate any unusual noise in machinery that cannot be "spotted" otherwise, one end of the tube being applied to the car, and the other moved about over the suspected sources of the noise. Ignition troubles or difficult starting should not

impress the intending purchaser so unfavorably as they generally do. A second-hand car often wants rewiring, which is not an expensive job; while a car may run ideally on its trial trip, and yet be in the final state of the deacon's famous "one-hoss shay." Neither should paint nor upholstery lead the looker after a bargain astray; they are cheap compared to engineer's work.

Looseness in the steering should be looked for, especially in the steering pivots, which, usually having no adjustment, will give some indication of the wear the car has had, unless, of course, it is so old that they have had to be replaced or rebushed. The amount of play in the steering wheel is easily tested and located, whether in the worm or other gear at base of steering post (where it is often adjustable) or in other joints of the connections. Right here it is timely to observe that an automobile has one notable advantage over a horse, in so much that the unwary purchaser is hardly likely to be saddled with a purchase that is absolutely worthless; but he will, however, do well to consider carefully the probable necessary replacements his car may require, even assuming it to be generally in fair order. It is impossible to enumerate all possible requirements, but among them may be mentioned, commencing with the important ones:

New gear. (If one speed only worn, can it be replaced without entirely replacing gear?) New pump. Those of cogwheel type usually wear out easily. Tires. How much life may be expected of them? Chains. Ditto. Re-leathering or lining brakes. Re-wiring car.

In conclusion a few final remarks may be added, some of which may seem almost supererogatory, though founded on actual cases that have come under my observation. Second-hand cars of little known makers should be carefully





MR. GEORGE H. DAGGETT AND THE PACKARD HE IS TO TOUR EUROPE IN

avoided. They may have been experiments or failures. With the productions of the really first-class and established makers, the purchaser will be generally safe, but let him satisfy himself of the date and type of the car. Occasionally an early and an improved pattern have little apparent difference in appearance, at least to the novice, who will pay dear for his lack of discernment later on. There are a large number of good, though not big concerns, who turn out satisfactory cars at the present time. It does not follow, however, that their earlier productions would be worth purchasing; in fact, in many cases they were rubbish. Light and cheap cars are to be eschewed unless they are nearly new; on the other hand, some of the old and slow cars, both cheap and otherwise, may do very good service in the hands of purchasers who want something at a very low price, and who do not demand speed. Good value from a practical point of view may thus often be obtained from an obsolete pattern of car; but it is advisable to find out what are the chances of getting any

necessary parts for the car before you part with your money for it, since if these have to be specially made they are apt to be expensive.

As a rule the purchase of a well made second-hand car that has had, say, less than a year's wear in careful hands is a wise proceeding for a beginner, but he must expect to pay a fair price for it; the search for a "real bargain" needs to be conducted with more circumspection, and not without a fair amount of technical knowledge.

#### **Saving Spur Teeth**

Breaking of pinion teeth is almost always due to the awkwardness of the driver either through his not withdrawing the clutch sufficiently when changing speed in passing from the lowest to the highest, or more frequently by his changing too rapidly from the highest to the lowest speed. For the latter operation a good driver, having withdrawn the clutch, will wait to maneuver his change speed lever as the car slackens speed while using the speed required. If hurried to change speed brake lightly,



by which the full force of the car will be prevented from taking effect on the teeth of the spur wheels.

It is absolutely necessary to examine the change speed gear from time to time; then if it is seen that the teeth are broken in the slightest degree the pieces should be immediately removed from amid the mess of grease and oil with which the case is filled. If this is not done and they are left any time, these pieces will infallibly find their way between the wheels and cause other and more serious damage. If, unfortunately, you break several adjoining teeth on the same pinion, the speed, including that particular wheel, becomes useless. When such an accident occurs the first thing to do is to fish out the pieces until satisfied that the very last one of them has been removed, then make the best of your way home on another speed.

#### Standard Crankshafts

To the graduate from the expensive class of replacement and repair in the College of Experience adoption of a standard for crankshafts seem to be very desirable and also very easy; but upon looking into the matter further he will find that the advantages of the plan do not seem to be very great, while its difficulties are quite apparent. In the first place there is really no particular advantage, so far as the cost of manufacture is concerned, to be obtained from the standardization unless all crankshafts are to be

made by one concern. It is obvious that if one concern were to make all such shafts its expense in dies and tools would be considerably reduced if all the shafts made by it for a given size of cylinder or engine were to be identical. But if two or more concerns are to make such shafts, then it would be no more expensive for them each to make its sets of dies and tools differing from the others than it would be to make identical sets, and, in fact, perhaps it would be less expensive; so that in this view of the case we can see no advantage to be gained as regards the cost of production.

One who proposes to build a gasoline automobile engine can, at the present time, buy a crankshaft, which is a regular article of manufacture. He can buy it either in the rough or finished state, and it is probable that he can buy it at as favorable a figure as he could if several concerns were making the identical shaft; the fact being that for all practical purposes a standard now exists for those who can or choose to conform to it; but it probably would always be true that certain builders would prefer proportions differing from any standard that might be adopted and would be able to persuade customers with money to spend that it was worth while to spend it for a shaft differing in some particulars from the commonly accepted standard and believed to be, on that account, more or less superior to it.





## An Incident of a Summer on Mt. Vision

*By Dorothy Hopkins*

**I**T was an ideal day in early fall, the atmosphere soft and hazy, and the trees and shrubbery rich in exquisite autumn colorings, while the sunlight threw a glamor of gold over all. My friend, Mrs. Belden, and myself were chatting as eagerly as two women are capable, ensconced in the most comfortable chairs on the sunniest corner of her broad piazza. This was our first meeting since the close of the vacation season had brought us both back to the city.

"I have had the most enjoyable and restful change of my life," she affirmed, as we drifted from generalities into a more detailed account of the summer's experiences.

"The sparkle of your eyes and the roses on your cheeks attest the truth of that statement," I replied. "How did you happen to discover such Elysian Fields, and what sent you there?"

"Just plain, old-fashioned adversity," she answered laughingly. Then, lowering her voice to a confidential tone, she continued:

"You see it was this way. Jack came home one evening in June very much depressed, and when his favorite dinner of mushrooms and frog-legs failed to lift the cloud, I felt sure it was something serious. Later, when the babies were tucked in bed, I said to him: 'Jack, you are not yourself to-night. Are you ill?' He drew me down beside him as he said, 'No, Sadie, little woman, I wish it were nothing worse than that. But the truth is, the First National Bank has closed its doors and twenty thousand of our hard-earned dollars are deposited there. If we have to lose that amount it will mean hard times for us and our business. I shall have to ask you to postpone your trip to Bar Har-

bor with the Montgomerys,' and he looked up at me as though he were asking the half of my kingdom.

"His white face and martyr-like expression touched me, and I simply made light of the whole affair. 'Jack, you foolish old dear,' I said, 'don't look so glum over it; that summer tour is not worth a regret. We will just rusticate on our own lawn, under our own vines and apple trees. You know our back yard is a perfectly lovely little corner of the earth, and we can raise a pavilion tent, swing the hammock in the grape arbor and serve dinner out there as well, if you like. The same moonlight that falls on the seashore will shine over our garden wall, while the birds and crickets will give us cheaper concerts than Bar Harbor orchestras. It will have all the novelty of a new situation beside the advantage of not costing fifty or sixty dollars a week.

"'Don't, Sadie,' he said with a gesture of despair; 'your makeshift is only a parody on the pleasures of a real outing, and only make the circumstances more beggarly than before.'

"'Jack,' I said, 'listen—I am not so unthinking as I seem. We must make the best of what is left us, for our individual fortunes are secured by matrimonial bonds, which bank failures and a fluctuating money market cannot touch. Cupid pays big interest on riches entrusted to him. The bank has only money, and the loss of that doesn't mean the loss of happiness. Beside, I taught other peoples' babies before I had my own little kindergarten, and I can do it again if necessary.'

"'Sadie,' he interposed, 'your bravery makes me ashamed of my own feelings, although it is mainly on your account that I deplore the misfortune; but don't

mention teaching to me again. Of course I shall enjoy the sound of your voice better than the ring of an empty house when I come home at night, but I dislike the thought of your remaining in this hot town all the season, as though it were worse for me than for himself,' she commented with true wifely intuition. But a few days after he came home almost radiant.

"'Sadie,' he shouted, 'our finances are not so depleted as they might be—we shall realize about 50 per cent. on our bank deposits, possibly more, and I have made arrangements, subject to your approval, for you to spend two months on Mt. Vision.'

"'But we cannot afford it, Jack,' I pleaded; but he shook his head.

"'I shust dakes my von leedle Frau und der twins und goes to der country mit 'em, where dey gets some happiness mid deir hearts and dos vreckles on deir nose,' he returned with a mischievous look.

"'Jacob Strauss' arguments are final with him, so for two delightful months we spent our days with Mrs. Lattimer.'

Here I interrupted her.

"But Mt. Vision isn't on the trolley line, and more than that, it is half way to the clouds; how?"

A look of triumph anticipated my unfinished interrogation.

"You forgot that Jack bought an automobile in the spring," she responded; "that has put us in touch with many a new pleasure as well as that crowning one of Mt. Vision. As a matter of choice we slept and breakfasted at home, but in the early morning, while yet the dew glistened on the grass and that peculiar something was in the air which makes it a joy to breathe, we got everything ready and sped away. Being only two miles distant, little time was consumed in making the trips.

Jack spent the day in town but came out again as soon as business and the speed-law would allow, assuring Mrs. Lattimer that he economized on his lunch to secure an extra relish for dinner."

"Did you have the delicacies of the season so near the moon?" I inquired.

"Delicacies!" she repeated; "we had the rarities of the season—such luscious strawberries smothered in cream—real clover honey made by the bees and not by a patent process—eggs with no flavor of the past in them, and vegetables pulled fresh from the garden!"

"Don't tell me any more," I protested; "you make me envious."

"From Saturday until Monday of each week," she added, in spite of my feeble protest, "we remained on the top of the mountain and Jack declared he had not come so close to Nature before in all the years since he left the farm. We fished in the pool where a crazy little creek stops to rest in the shade of great willows at the foot of the hill. We roamed the woods as naturalists and searched the rocks for geological curiosities. During the week I lived on that spacious vine-draped veranda, embroidered or made 'Battenburg' as fancy dictated, or read romances in the hammock until I dozed, only to dream away the care-free hours.

"Romances, oh, yes; that reminds me of a quaint little drama enacted down there on the mountain, of which we saw the last act only, and in which our auto played a most conspicuous part."

Her face lighted up with a new enthusiasm that caught my attention at once.

"It was a beautiful Sabbath afternoon and the Lattimers, Jack and I had been for a long, delightful ramble through the fields and woods, coming home at sunset by way of the orchard and the garden. As we passed the carriage

house the twins called, 'Papa, where's our Billy?'

"Sure enough, where was our automobile? The carriage house door was open and fresh wheel-tracks led straight to the gate, turning toward Vinedell in the valley beyond instead of toward the city. 'Stolen,' we whispered under our breath, and Mrs. Lattimer hastened to the house in quest of her silver, which was found undisturbed, however.

"Jack telephoned Police Headquarters in the city and asked that an officer be detailed to assist in running down the thief. In the few moments of inactivity necessary while waiting for him to arrive we held an impromptu council of war in the parlor. About this time Mrs. Jenks, the wife of Colonel Gibson's overseer, came flying across the fields in great excitement.

"'Laws-a-massy me,' she moaned as she rushed in; 'oh, Missus Lattimer, does yo' knows anything 'bout my piccaniny Suke—hab yo' seen de chil'? She's dun ben kidnaped I'se feared, an' her pa gone tearin' after her!'

"We could not share the mother's apprehensions and assured her the girl must be safe somewhere. Had she any connection with the disappearance of our automobile? 'Impossible,' we said. At this point the officer came and began making his own observations.

"'Lattimer, have you any niggers about the place?' he asked, looking up as he completed the measurement of a footprint.

"'None but our Sam, and he has been with us for years; he could not have taken it,' replied Mr. Lattimer.

"'Don't be too sure of your man; here are a woman's footprints, too,' added the officer.

"This conversation was broken in upon by the shouting of the twins, and I rushed back to the house. There was, indeed, Mr. Lattimer's Sam and Mrs.

Jenks' Suke coming up with our automobile.

"'Evenin', Mrs. Belden; ise happy to make yo' 'quainted wif my wife dat is now—Mrs. Sam,' and he pushed his hat to the back of his head as he smiled broadly.

"Mr. Lattimer now came around the corner of the house, soon followed by Jack.

"'I dun got ahead ob de ol' fellah dis time,' Sam announced with a triumphant nod of his head which, someway, softened the stern look on his employer's face.

"'Scuse me, Mr. Jack, fo' takin' yo' automobill, but yo' see, me an' Suke's been waitin' powerful long while fo' a chance to get to de parson's, 'cause her folks keeps mighty sharp eye on her comin's an' goin's. But she managed to 'vade 'em dis aftahnoon, while dey was dozin', an' we wanted somp'in dat 'w'd get us dar plumb suddint, yo' know. Yo' wan't heah to ask, so I tuk it an' we'd no ways got dar if we hadn't had it. In no time de ol' man was arter us right smart on de Colonel's racer, Ol' Cyclone, what no hawss ever got ahaid of; but dis yere machine ain' wind an' muscle dat tires out, an' we jus' zipped along. Well, we'd got started back fum de parson's when I see'd a big cloud ob dust comin' tow'd us an' I says, "Suke, yo' pa am prob'ly in de middle of dat a'r," so we pulled out 'longside de bushes an' waited. He went by like lightnin' wifout spottin' us an' we just made tracks fo' home 'bout dat time; he'll be 'long back d'rectly, madder'n ol' Pharoah, I spects.'

"Suke's face wore the same look of conscious victory tinged with maidenly coyness, and who could be angry with a bridal pair, anyway? Mr. Lattimer smiled and Jack gave a ha! ha! in which we all joined. Mrs. Jenks now came running back, crying, 'Oh my long lost

honey!' as the father dashed in through the gate, 'Old Cyclone' wet and covered with foam.

"Just now the officer came in sight and the look of consternation on those dark faces must be imagined. Sam probably feared that the 'way of the transgressor' was liable to be hard, while the old man must have suddenly decided to make the best of the situation in the presence of those brass buttons at least.

"'Heah, yo' nat'rul bo'n darlin's, is yo' 'lowin' somebody else to 'gratulate you fo' yo' pa does?' he asked good-naturedly. Meanwhile, we wondered at his show of satisfaction. Dismounting, he took Suke in his arms and gave her a rousing kiss, and then shook Sam's hand.

"'I'se jus' proud ob yo' fo' a son-in-law, Sam; yo' hab my blessin'.' Then, turning to the rest of us he said: 'Dem's right peart childrun's ob mine, folkses; real extrao'dinary, 'cause when dey gets 'head of me an' Ol' Cyclone dar's bound to be some brains an' quick moves—more'n I eber spected to find in my famby. Who's goin' to take care ob yo' two childruns, now arter your splicin' bee?' he asked, looking at Sam.

"'It's not goin' to be my fadder-in-law, sah,' retorted Sam firmly, relieved at the turn of events.

"'Dat's a most remarkable happy-

fyin' disapp'intment, haw! haw! Here am thirty cents fo' yo' housekeepin'.'

"Mr. Lattimer now dismissed the policeman. Then turning to Sam he said, 'I ought to scold you for the trouble you have caused, but instead I will give you this,' putting a greenback into Suke's hand, which Jack duplicated.

"'Clare to goodness, chil', yo' is bound to get along now, honey; yo' jus' bank dem two fivers 'gin de time yo' hab an automobill of yo' own,' counseled Mrs. Jenks.

"'An' bofe ob yo' come to yo' daddy's house when yo' is out ob a job an' wants some co'nmeal an' beans. Come, Mammy, help me rub down dis yere hawss now de childrun's found.'

"They went away shortly after, the four of them, and left us in peace, fully recovered from our temporary fright, and ready, under the circumstances, to condone their offense."

#### Self-Starting Engines

Nothing is more gratifying to the owner of a car propelled by a four-cylinder motor than to be able to start it from rest by movement of the ignition lever only. Very few, if any, engines will thus perform every time, but the chances of their so doing are increased if just before they are stopped by switching off the current the engine is raced for a second or two.







## Riding on a "Rubber Neck"

By R. V. Pelton

**W**HEN in the glad spring time you see a crowd gathered about the Flatiron Building at any hour of the day and lapping over into the evening don't rashly conclude that the crowd has been blown there by the winds which gayly cavort about that genial corner of New York, particularly if the crowd should happen to be composed of as many differing elements as in the old nursery rhyme:

Rich man, poor man, beggar man, thief,  
Doctor, lawyer, merchant, chief.

It will evolve, if you should ask questions, that the crowd is there to learn something with the least possible waste of time about the big city. Nine out of ten strangers who come to New York have limited time, if not a limited purse. In a day and a half now, thanks to the automobile, "rubber neck wagon," as it is called by the scoffers, visitors can go back home primed with enough verbal material to last through many winter evenings by the fireside. The register of the company owning the huge, sightseeing electric motor, exhibits names from every part of the union and outside of it. Mr. Heany, of County Cork, Ireland, is cheek by jowl with Miss Smith, of Deadwood, Dak. The Justice hobnobs with the Mayor of a Connecticut town.

The original trip of the first of these motor vehicles was through Central Park and upper New York, but this is

now supplemented by one through the business section of Manhattan and another through Chinatown at night. The company lets its patrons slum to their heart's content, properly bolstered up by a matron, a guide, a chauffeur and their fellow passengers.

In the waiting room there is the same kind of crowd that one sees in London and Paris at the booking offices of the tourist agencies. There is a natty little Frenchman with pointed beard and flirtatious smirk gazing at the top of the secretary's pompadour, just visible over the rolltop desk; there is a stout German with his frau gowned in creaky black satin; a company of three, four, five, six young women of uncertain ages, but certain localities. You would know that they were born in the vicinity of Bunker Hill before they spoke.

There are contingents from the West, the South and down Maine way, each comparing notes of the reasons why they have chosen this most reasonable and obvious method of learning a little about the landmarks of the city to which people come year in and year out and really learn nothing outside of the information which relates to shops and theaters. A middle-aged man who has the air of financial prosperity voices his need to a score of people waiting to take seats in the big vehicle which was bound downtown.

"I've been coming to New York now

ever since I can remember and I just made up my mind to take a couple of hours this trip and learn something about the old place. Somebody from my town came back and held me up one day by asking if I'd ever seen Charlotte Temple's grave and if I wasn't disappointed at the tree Li Hung Chang planted. Never'd seen either one of 'em, and I just made up my mind that no young man of twenty-one—the fellow that asked the questions was my son, by the way—was going to get the best of me, and this time I'd see the tree that Charlotte planted and the grave of Li or I'd know the reason why. Couldn't find a cabman in town that had ever heard of either one of 'em. All too busy countin' up their money, I s'pose, and then I see these people seeing things here, and here I am."

The guide said he'd turn the gentleman's head before they finished the drive. He who took this particular party downtown was one of a capable corps. This corps is made up of actors out of an engagement, ministers who need a vacation from the pulpit, and young college men eking out their terms. The guides are required to fit themselves out with a course of Manhattan history and to be able to repeat the same entertainingly. All jokes are carefully edited in the office and none is allowed to creep in which might hurt the feelings of the occupants of the coach.

"Couldn't you tell us about any of these expurgated jokes?" the manager was asked. "Well, here's an example: One of the guides pointed out St. John's Cathedral, the new one, you know, and said: 'You will notice, ladies and gentlemen, two men and a boy working on our famous cathedral. The next time you see it, I have no doubt there will be three men working there.' Now, you see, Bishop Potter and his wife might

be on that particular auto and dislike a reference to the work made in that flip-pant way. So we have made a rule that when any of the guides thinks of something to say, he shall tell us first and we'll tell him whether we think it's funny enough or too funny. In that way we can promise that the most tender sensibilities of our patrons shall not be hurt."

"All ready for the downtown coach!" sounded through the waiting room, and the groups got their checks ready and started for the sidewalk.

The chauffeur, a proud and haughty gentleman, is in place at the wheel. He has all sorts of certificates to his expertness. Anyone who was skilled in telling fortunes by the back of the neck could tell that he was above his place and that the iron had entered his soul for not having the opportunity of taking charge of the racing car of a millionaire.

The guide represents democratic tendencies. He is friends immediately with every man, woman and child on the coach. He gives them little bits of information about himself as he helps them in and out.

"Born in the West. Actor for twenty years. Nothin' in it these days—all goes to the syndicate. Like the business first rate, little hard on the throat, but it's in the open air, and, best of all, it brings me in direct contact with the people—the peepul—that's what I like."

The chauffeur does not turn his head, but his shoulders rise haughtily and his hump of disdain swells so that his cap is pushed over on one ear.

The people begin the ascent of the ladder placed against the coach, and the crowd comes closer to see the early spring styles in hosiery. They don't get much information from the Boston spinsters, who draw their clothes closely about their lower limbs so that progress is almost impossible and are gently





AN ENGLISH SELF PROPELLING FIRE ENGINE

lifted into their seats by the stalwart guide, who covers heroically the misstep of the last one, who lost her hold and would have exhibited flat heels and four buttons of a common sense shoe if it had not been for his quick movement. She thanks him blushing and hopes he didn't look. Miss Manhattan has patent leather boots with high heels. She has also a new lace trimmed heliotrope silk petticoat and she is altruistic in temperament. She lifts it daintily and stops twice in the short ascent to lift it a little more. She believes in having an ankle to windward.

The typical New Yorker, who thinks he knows all about New York, takes the vacant seat near the standing point of the guide, and after a few more arrivals stow themselves into place the chauffeur throws on the current, "juice," he calls it, and circles the Flatiron Building before it starts down Fifth avenue. Questions begin. The first interrogator is a middle-aged lady with soft white curls and railroad time tables in her hand.

"Mr. Guide, can you tell me when the Occidental and Oriental steamers leave San Francisco for Hong Kong?"

"Sorry I can't, ma'am."

"Why, they told me in the office that the guides would answer any questions that were asked them."

"Within limits, ma'am, within limits."

The little lady with white curls breaks in again:

"Do people have to wear flannels in Italy?"

"We expect to run touring cars through Italy and in Egypt next year, ma'am, and then I can answer your question."

"This is the church where John Rogers, the father of Presbyterianism, preached, and below it one where the largest ecclesiastical painting in the world is hung. Right opposite is the only building besides the Consulate which is permitted to fly the French tricolor."

"This, ladies and gentlemen, is the famous Tiffany's—the bride's joy and the bridegroom's sorrow." The bride and bridegroom in the party look conscious, and the bridegroom blurts out with that necessity of confession that overwhelms the sinner. "I bought one there yesterday; it's a sorrow, all

right." The bride pokes him playfully and tells her neighbors that he's just "joking, that's all."

The automobile rounds dead man's curve, where the guide, with a thrill in his voice which makes even the Deadwood product shiver, announces that there was a time when the deaths there averaged one a day.

"Worse than Deadwood," says Miss Smith.

"This, ladies and gentlemen, is the smallest building in the city. You will notice the old fashioned swinging sign, the exact simile of those in the old country, and may be surprised to learn that, tiny as it is, the place rents for \$5,000 a year."

"Well, I suppose I've been by that a thousand times, announces the New Yorker, "and I never noticed it before."

"You, of course, know the history of the queer sign on the other side? No? That is known as the crazy sign; it is in front of one of the most successful firms in the city, and when it was first started the proprietor's little girl drew it on her slate. Her father had it copied, enlarged and has used it ever since. It is quite an oddity, even in a city of queer signs."

The New Yorker assumed an attitude of interest.

"Well, that's one on me. Never noticed it before, and it's right on Broadway."

At this point the big car is stopped by a congestion of traffic, and a row of curious and amused people line the sidewalks.

"That," says the guide, pointing to them gravely, "is known as Rubberneck row. You will find just such rows all over New York wherever anything unusual is taking place, from a funeral to a hole in the ground."

The lady from Harrison, Pa., writhes resentfully.

"I don't see why New York people have to stand and gape so for. I've seen New York people in the streets of Harrison, Pa., that looked just as queer as the Harrison folks and acted a good deal queerer."

On the coach was a genuine cowboy. He wore a sombrero with three dents, and if anyone had searched him for concealed weapons he would probably have disgorged a six shooter.

"I'm looking for Nick Brown," he had explained to the guide as he had crawled over the spinsters into place. "He was out to the ranch last year and asked me to look him up when I came to N'York."

"Have you his address?"

"I lost it," he explains, shamefacedly; "but don't you take any trouble to go out of your way. I'll be sure and find him wherever there's anythin' doin'."

It was in the center of Rubberneck row that the cowboy spotted Nick. He leaned over and touched the guide. "There's Nick, now. Can you wait till I get out and get his number? I don't want to lose the rest of this ride."

The guide waited and the party watched while the cowboy and Nick met. It ended by the cowboy dragging his friend onto the automobile and depositing him alongside of Miss Boston.

"Say, he's always intended, when he had time, to look up that milestone that marks the beginning of the old Post road. Now's a good time, ain't it, guide?"

The coach moved along while various objects of interest were pointed out.

"You will now look down Broadway and view the cañon of skyscrapers."

The top of a coach is the best place in the world to get just the right point of view. One has neither the bird's eye view that you get from the top of high buildings, nor the worm's view that you get on the ground. People and places



#### CUBAN SCENES

From Photographs by Augustus Post

Ox Cart with Undisputed Right of Way  
 Captain of the Port Coming Out to Meet Arriv-  
 ing Vessels  
 Morro Castle, Entrance to Havana Harbor

Tomb of Gen. Maceo, One of the Highest Spots  
 Near Havana  
 The Poor, Sickly, Starving Cuban  
 Bringing Sugar Cane to the Mill

have a distinct proportion. The perspective of the skyscrapers is particularly interesting. Way down it seems to close up, the lines of vision converge, and from the point where the guide stops it looks like a long, narrow V.

The German becomes greatly agitated.

"I'll bet you \$3," he said to Frau, "that the coach can't get through."

"Do you get anything for yelling out the name of that restaurant?" asks a business man as they pass a famous hotel and restaurant.

"Not a cent," answers the guide, mournfully. "I think they add to my check whenever I go there. And this, ladies and gentlemen, is Trinity Church, the only thing that ever got ahead of Wall Street and stayed there."

At the Stock Exchange another row of rubbernecks forms as the big auto is lightened for the moment of its freight. This is Miss Manhattan's opportunity, and her descent is a work of art, which draws a sigh of appreciation from the spectators. The guide holds the Boston skirts carefully, turning away his own eyes. I stay on the coach and chat with the chauffeur, who unbends slightly.

"Can't see why it is," I said, after we had talked a bit of shop and he learned I was going to write the thing up, "that everybody stops and laughs at these affairs. Why, there ain't anything amusing about a lot of people driving slowly about a city in a big automobile and seeing its historic features. I wonder what the reason is?"

The chauffeur had but one explanation: "New York folks are the easiest ones in the world to be amused. They'll stare and laugh at anything. Why, I suppose if the amount of time that New York men have wasted looking into those subway holes since the road be-

gan building could be reckoned up it would represent years of working days."

The Stock Exchange was quiet. The cowboy allowed that he'd rather lose his money at three card monte, and the lady from Deadwood, pointing out the khaki covered attendants, wanted to know if all New York brokers wore those yellow suits.

"Those aren't the brokers," explained the guide, "those are employees."

"They're a good deal better looking than the brokers!"

This ultimatum not being disputed, the party started again for the car.

"South street," says the guide, "is so called because it is the most easterly street in New York. Near it is the bonded warehouse whose four and a half stories represented, when it was built, New York's only skyscraper. Never saw it before?" This to the New York man.

"Business in these small oyster houses rises and falls with the tide."

A longshoreman in a truck waves his fist threateningly. "Ish dot so? Well, wot of it?"

A grimy boy turns a handspring and yells to the chauffeur, "Ah, git a horse, git a horse."

The oldest cemetery in town, the theater where Charlotte Cushman, John McCullough and other stars of the past once played, engage attention in turn, other points of interest are pointed out and then the coach makes another dexterous turn into the Chinese quarter.

The friend of the cowboy and the other New Yorker shake hands with their eyes across the expanse of seats.

"Learning a few about our little town," the expression seems to say.

"Where did Catherine slip?" asked the New Yorker facetiously.

"Farther down. We've passed it. This, you will notice, ladies and gentlemen, is the toughest part of New York. If

Theodore Roosevelt never did anything else he did get these tenements removed and had the space turned into what is known as Paradise Park. Don't mind if people throw stones at you and call you names. The stones never hit and the names don't signify. Those are the free baths; they are used sometimes."

The contingent from down Maine shiver a little and suggest prohibition as a remedy for toughness.

"This is the crookedest street in New York, geographically considered. Please note that I put myself on record as using the words 'geographically considered.'

"This is the shortest street.

"Never heard of it? (to the New York man) "Thought you knew your town like a book."

"This is the Ghetto, where there is a record of a birth an hour and a lower rate of crime than in any similarly thickly populated section in the world.

"Ain't a birth every hour criminal?" asked the Boston spinster, disapprovingly. "It would be in Boston."

"That's Steve Brodie's," says one of the passengers, helping the guide in a short interval of silence. "You know he jumped over the Brooklyn Bridge."

"From; not over," corrects the guide.

"You will note as we turn into Broadway again, the Park Row Building, the highest in the city, only to be outstripped by the new Belmont Hotel which will be two or three stories higher."

Still other sights of interest. It is noticeable that the New York men know less, and as time goes on ask more questions than anyone else on the coach. Once or twice they correct the guide, who receives their words courteously and promises to incorporate them in his next lecture.

"You'd be surprised," he says, "how every time I take an auto load out I hear something new myself from some



one in the party or something is suggested to me. New York is a wonderful city; there is hardly an inch of ground from the site of the first settlement of white men on the island of Manhattan to the site of the world's fair in 1853 that has not its especial interest. Never heard of either? You don't say? Thought you knew your little old New York.

"Perhaps you don't know how A. T. Stewart got his start in life?"

The coach is passing the former site of the old Stewart store.

"Well, legend has it that when A. T. Stewart stopped the runaway horses of a certain wealthy lady in New York and she offered him any reward he wanted, he asked her to allow her carriage to stand outside his store for two hours a day. She did it, and before long there were other carriages, then others, until traffic was blocked for a mile. Then his fortune began.

"We are now, ladies and gentlemen, passing the last plate glass window that you will see before we reach the terminal of our trip. I would suggest that



the ladies fix their hats for the last time. Also, I would suggest that in alighting you take care not to break your necks and thus spoil what I hope has been a pleasant and profitable trip. Thank you!"

The New York man pressed a bill into the guide's hands.

"It was worth it, old man. I'm proud of my little city, and I'd never have known what I should have known about it if it hadn't been for an automobile and your very entertaining self."

### **Circulation, Complications and Cures**

Although many object to natural circulation, the wonder is that the compromise between forced and natural is not more often adopted, since it simply amounts to so arranging the radiator that a considerable proportion of the water is carried above the engine level. This and the proper disposition of the circulating pipes, of course on the assumption that sufficient area of radiator is given, will enable a car to run quite satisfactorily even with the pump out of commission. The water boils away quickly, and must be frequently renewed, but it is possible to continue to drive. With a system in which practically the whole of the water is carried below the engine, nothing can be done unless the pump is at work. Nowadays, pumps give very little trouble indeed, though they used to be a considerable source of annoyance. It is well to know the defects of the pump you use, and to have the necessary spares or duplicates of it on hand in case of the need for them which is sure to come sooner or later. If the failure to act on the part of the pump is not noticed till such time as the engine gets greatly overheated, no attempt should be made to fill up the tank again until the engine is cooled off. In extreme cases it will be found that when the current is switched

off the engine will go on firing. If this is so, the throttle should be instantly closed, as every revolution which the engine runs at this heat is dangerous, and may result in seizing. If things get to this stage, no water should be put into the tank for at least twenty minutes.

### **Caught After All**

A city man kept a diary. The following is a record of one strenuous minute:

"Was nearly run down by a cab. Narrowly escaped being killed by a motor truck. Was almost chopped up by a motor; electric cab missed me by a hair. A second cab failed to catch me napping. A bicycle missed me. An additional automobile didn't run over me, owing to long practice dodging them. Reached the curb safely, but slipped on a piece of orange peel, and will be out of the hospital soon."

Moral: Stay on your own side of the street.

### **An Aid to Prompt Starting**

After a car has remained unused for some time it is customary to agitate the float in order to allow a supply of fresh gasoline to flow into the carbureter. To do this, the side door in the bonnet has in most cases to be opened and in others the whole bonnet has to be raised. A useful little device to obviate this is now being fitted to some of the foreign cars. A light rod with a spring is fixed so that it passes through one of the holes in the honeycomb radiator or lies against the frame; the rod terminates in a small bell crank lever, one end of it being over the upper end of the float spindle. Thus a few pushes on the rod secures a charge of fresh gasoline in the carbureter and away starts the engine on the first turn of the adjacent starting handle.



## Jacks and Their Use

By Reginald Vernon

**L**IFTING jacks, like everything else in life, are valuable or not according to whether they do well or otherwise the work they are called upon to perform, yet good or bad a lifting jack is one of the most useful of the many accessories which go to make up the necessary outfit for a motor car. It is one of those things which is not often needed, but when it is, it is wanted very badly. Then when it is needed there is nothing more annoying than to find that the jack will not lift the car. It may be that it is too high to go underneath the axle, or too low to lift it, though in the latter case this is not so much of a difficulty; you can usually find something with which to raise the jack to the required height.

However, it is far better to have a jack which is suitable for the car; therefore when purchasing this useful adjunct it is advisable to have one or two details of the car at hand. In the first place, the distance between the ground and the axles of your car should be known so that you will be certain to obtain a jack which can be used instantly when required without any trouble. Another thing important to note is the most convenient place for putting the jack to lift the wheels from the road. Especially is this necessary with regard to the front axle, as in some instances it is advisable to choose a jack with as large a head as possible so as to rest well under the steering socket, while in other

cases one with a narrow head is best, so as to enable it to lift on to a solid portion of the axle, e. g., the shoulders behind the steering socket.

Another point is the length of the handle employed to actuate the jack. With a large diameter wheel, of course, a longer handle is required than if the same jack is used under the axle of a wheel of smaller diameter. Many jacks



An English Hybrid Car for Which \$600 Is Asked

in which the lifting screw is operated by means of a pawl and ratchet are provided with very short levers which necessitate the operator assuming a cramped position underneath the car in order to manipulate the jack. This difficulty may easily be overcome by procuring a piece of tubing sufficiently long to slip over the ratchet handle, thus enabling the screw to be worked from a comfortable position. This piece of tubing can be carried with the jack, and it will not take up any appreciable room, as it can be shipped and unshipped from the handle as required.

If the jack is found to be too high when the time arrives for placing it in

position the problem to be solved is how the car is to be lifted. A very simple method of overcoming the difficulty is to put the jack into position (we will presume it to be under the rear axle at an angle), and then to push the car backwards against the resistance offered by the jack. The power should be put on to the car forcibly but not suddenly, since if any great amount of force is used the car will mount to the top of the jack, and owing to its momentum will run over to the other side, in which event your labor will all have been in vain. If, on the other hand, only sufficient energy is exerted to lift the car on to the jack it will rest comfortably in position.

This is such an obviously simple matter that it would almost seem superfluous to mention it, but a car-owning friend admitted to me once that, finding his jack too high when he had to repair a tire, he seriously contemplated digging a hole in the road to accommodate it, until after a careful survey the idea of pushing the car on to the jack as described presented itself to his mind, not, however, before the tire repairs had actually been entered upon.

The short lifting-jack is in its way almost as big a nuisance as the taller one. When a short jack has to be used it is, of course, obvious that some packing will have to be introduced to make it of sufficient height to enable it to be of service in as comfortable and satisfactory a manner as possible. The operation of packing up a jack sounds extremely simple, but as a matter of fact I have on more than one occasion found it a very troublesome piece of work.

Once in particular I recollect, when touring through one of the many barren districts in Kansas, where miles

may be covered almost without seeing a tree, a puncture necessitated my trying to use a jack, which was much too short for the car. The only available packing that was to hand was from some loose stones. Even after suitable ones had been found one member of the party was obliged to lie beneath the car and hold the packing and the jack in position until the combination was so arranged as to be kept from falling to pieces by the sheer weight of the car.

It is not often that one carries such articles on a car as will form ready and substantial packing for use with a jack. If the automobilist should become possessed of one of these very necessary lifting arrangements which may be too short for its work, it is always advisable to procure a block of good hard wood of sufficient height and shape, and if possible to attach this to the base of the jack so that all possibility of its being lost may be avoided; or, if this is not practicable, he should make a practice of always seeing that the packing block is in the car, as well as the jack, before starting out on a journey.

#### **Slippers On and Off**

After exhaustive tests abroad to determine what the differences, if any, were between motor vehicle wheels fitted with solid or pneumatic tires, with plain or non-slipping treads, it has been demonstrated that if the thickness of the tread of an ordinary pneumatic tire is increased too much the tire becomes less elastic than tires fitted with non-slipping devices, while the latter have the added advantage of being practically insured against cuts and tearing. Another point established was that at speeds of six to twelve miles an hour the difference between none of the tires is great.

## Raising Up a Dust Cloud

*By Winifred S. Pryor*

**N**OTHING adds more to the discomfort of a ride in a motor car than the cloud of dust which the car raises and envelops itself and everything connected with or surrounding it, in. Many efforts have been made to overcome the discomfort, but none have been entirely successful though some have gone far toward mitigating the nuisance.

Perhaps the most searching and most scientific effort ever made to discover just what the cause of dust raising by a motor car was the investigations made a couple of years ago by the Automobile Club of Great Britain and Ireland. When the club took hold of the question as being the one most vital to the comfort of the car user, no less than of the community in which the car was used, it was first planned to conduct the experiments over a special track covered with dust at the Crystal Palace, but this was found to be too costly, and a suitable track was subsequently arranged on a cement cycle path, opposite the grand stand. To form an imitation on this track of a dusty road, dust was raked over the surface of the track with rakes, but it was found that this sifted dust when run over by a car for some reason or another did not rise in anything like the cloud it would have done had the dust been on the road. This was subsequently determined to be due to the absence of depressions upon the track, the plunging of the wheels of a car into such depressions where they occur on the roads being responsible for much of the dust it raises. The dust was replaced by sweepings from a flour mill and the ideal condition for the tests was thereupon discovered.

A section of the track, 60 feet long

and about 15 feet wide, was covered with these sweepings to the depth of half an inch. The other half of the track was left clear for the observation car, fitted with a speed recording apparatus. After several experiments, two cameras were placed on the inside of the track, and focussed on one point on the grand stand, indicated by the car number there held in a fixed position by an attendant. The pictures were taken simultaneously when the cars had passed this point long enough for the car number to show in about the center of the dust cloud it had raised. Subsequently these photographs were thrown upon a screen showing just exactly what each car did. More than 500 exposures were made, and the results proved that photography does permit a satisfactory judgment to be formed of the character and shape of the dust clouds raised by a vehicle. Nothing before these British experiments had ever been done, even in France, which could serve as a guide as to the effect of construction upon dust raising.

All previous ideas had been formed on ordinary scientific lines. A motor car disturbed the road dust by its wheels, and the dust was carried to a height or distance by the wind or air draught of the car. Motorists not familiar with the laws of air currents thought the pneumatic tires themselves sucked up the dust, and had not considered the effect of the air currents produced by the car.

These tests showed conclusively that when a car is driven through still air at a speed of twenty miles per hour, air is displaced by it in proportion to its cross section. Part of the air so displaced passes over the top—part to

the right and left, and part underneath the car. It was with the latter that the dust raising question was concerned. All are familiar with dust clouds raised by wind sweeping over a dusty road. With some roads a small breeze will raise dust to a disagreeable extent. The heavier parts of the dust are blown from the prominences into the depressions, leaving the former bare, while the lighter parts drift away in the form of a cloud. When a horse-drawn vehicle comes along the dust in the hollows are disturbed by the animal's hoofs and the wheel tires. The dust so disturbed is caught by the breeze and forms a much larger cloud than the breeze could effect alone. With a car having pneumatic tires a still larger amount of dust is disturbed and lifted to a height proportionate to the speed, and even on still days the artificial breeze set up by the rapid passage of the car plays the most important part in throwing dust to a great height and distance. The under current and the side and back currents set up by the car rushing in to fill the vacuum are the most important. The same thing noticed in the swirling eddies in the rear of a broad-sterned boat took place in connection with the air disturbed by a car.

Therefore, while it was expected in the British experiments that the size and shape of the pneumatic tires used would have their effects, the shape of the car, the squareness of its stern, and the sectional area of the air inlet and exit were expected to play their parts. The dust raised by the tires was expected to be a definite quantity, but if the air currents were small it was thought the dust would not rise high and would quickly settle, whereas if the drafts were larger the contrary effects were to be expected. Although in the end previous ideas

were largely corroborated, this was not so entirely, owing to the fact that but in few cases did the cars possess all the features offering the best hopes of small dust raising.

The tests really showed that the size of the tires had but little to do with the dust cloud the car raised or did not raise.

The reasons why pneumatics raise more dust than do solid tires must be looked for in some or all of the following. Motor cars are propelled solely by stress through these tires. With cars at rest tires are compressed vertically by the weight. When stress is applied by starting the tires are strained tangentially, the rubber in front of the wheel being compressed, and that behind where it leaves the ground is stretched in both cases in a direction parallel to the rim. When the car moves forward the particles of the tire in front as they come under the wheel are brought into a state of tangential compression. The roughness of the road and the driving power of the engine prevent these particles from springing back until the forward movement of the car has raised them from the ground. Then they suddenly change their state of tangential compression to one of tangential tension; in other words they move rapidly backwards along the rim to recover their original position. In doing this the tire scrapes or sweeps the road surface, and carries up the lighter dust. The difference of the speed of alternate compression and stretching is the speed at which the tire sweeps the dust to the rear. Small stones are overturned, and all finer particles are projected backwards and upwards. In all this the tire is worse than a sweeping brush which smothers some of the dust it raises, while the tire retreats and leaves the dust free to rise.

In the case of deep tires at a speed of twenty miles per hour the tire particles may sweep the surface at a speed of seven miles per hour apart from their rolling velocity. Owing to the necessity of getting proper traction through the dust it may be said that the dust sweeping properties of tires depends (1) on the elastic sensibility of the surface of the tire, (2) on the width of the tire on the road, (3) on the driving stress applied, (4) and on the speed of the wheels.

The disturbing elements are two: (1) Any air thrown out sideways by obstruction under the car. (2) The inrush of air behind the car after the vehicle has passed. A low-placed cross muffler or tool-box, or, to a less extent, a tangle of gear causes the first. Anything in the shape of a cone pointing forwards is bad; a flaring mudguard is sometimes very bad, particularly when it is low at the back. A car tried with and without such mudguards will soon show the difference to be very noticeable. A point I would like to impress strongly upon all, although it is against previously conceived ideas, is that a low car is not in consequence a dusty one, nor is a high car necessarily a dustless one. When the bottom of the car has a tangle of gear and boxes, particularly with smaller air inlet than exists, that is bound to make it a dusty car no matter how it may otherwise be constructed.

Before I saw the British photographs I had theories, now I have no theories. The only facts we actually know about this dust raising problem to-day may be summed up as follows:

Hard tires are better than soft.

Narrow tires are better than broad.

Neither have a preponderating influence.

Flaring mudguards are probably bad, particularly when coming low down.

Cars low underneath are worse than cars well off the ground.

But smoothness of bottom shape and absence of forward coning are infinitely more important.

There is strong evidence that it is desirable that the car should slope upwards towards the back.

The shape of the car is of the greatest importance, but little is known now as to which shape is the least likely to be the least dust raising one.

#### Setting a Firing Cam

In the mind of the ordinary man there is often considerable doubt as to how the firing cam should be set, so the following simple method of being sure it is done correctly may be useful. Place the advance spark lever in the center of its rack, and when it is in this position the cam should be set to fire when the piston is just at the top of the compression stroke. This method gives an equal range of firing, both before the dead center and over the dead center. It will be found that engines vary, according to whether they are high-speed or slow-speed engines, and in the case of a high-speed engine the method above described may be best carried out by setting the firing a little late. With a high-speed engine, to set the cam, it is best to place the advance spark lever three-quarters of its rack towards late firing, and then set the cam to fire when the piston is at the top of the compression stroke.

Users of four-cylinder engines should note that it is not necessary to turn the engine round to get any particular cylinder on contact. All that is necessary is to connect the commutator brush of the required cylinder to the frame, and contact is made. To facilitate the setting of the firing and the valves, the flywheels of most four-cylinder engines are marked



in the following way. Turn the flywheel round until the marks are at the top (i. e., in a vertical line with the ground), and you read 1, 4, you know that pistons 1 and 4 are at the top of their stroke, and consequently that if 1 is exhausting, 4 is firing, and *vice versa*. The cranks in the average four-cylinder car are set at 180°, so that 1 and 4 are up together, and 2 and 3 are down together, the order of firing being 1, 3, 4, 2, counting from the radiators.

#### Value of Competency

The times when a car is "en panne"—that is, broken down—are still unpleasantly great. It is perhaps no exaggeration to say that fully 90 per cent. of the stoppages are embarrassing—that is, cause prolonged delay—solely because the professional machinists or drivers are only superficially acquainted with every detail of the mechanism, and consequently are unable to remedy matters at once. The thoroughly competent machinist, the man who has helped to construct automobiles and is thus in possession of a full knowledge of them, can, in the majority of cases, put his finger unerringly on the defective part and will have a machine running again in less time than it will take the "rule of thumb" man to try one thing after another until he stumbles upon the cause of the difficulty and then the remedy for it.

#### Steaming at the Radiator

You should observe how great the heat in the cooler gets in the ordinary way, looking carefully to it that no steam is given off. If any noticeable increase of heat or steam occurs, it is safe to infer that the water circulation is failing, and attention must be given to the matter at once. The chances are that the pump will be the cause of the trouble. It will

either have become deranged in itself, or, what is more likely, it will not run because the friction wheel, or some other means employed to drive it, has temporarily failed from some trifling cause. This applies to cars with large radiators not depending at all upon forced draught. With machines which are fitted with a fan, the extra heating may, of course, be due to the belt or chain of the fan having come off. You can always tell whether the pump is working by the circulation gauge, if one is fitted. If there is nothing of this kind (and many cars are without it), it is easy enough to discover whether the pump is doing its duty by opening the tap while the engine is running. If the water is thrown from the tap in a good, vigorous stream no anxiety need be felt as to the soundness of the circulation.

#### Gears and Their Jumps

Some gear-boxes have the wheels that move (the sliding sleeve) the larger ones, that is, the driven shaft and not the driving or clutch shaft; with this type of gear difficulty may be experienced in coming back from third speed to second, and second to first, but it may be easily overcome in the following way: Depress the clutch at the change, and as soon as the wheels touch let the clutch in, at the same time pulling the speed lever into position. The change will then be effected without any difficulty. On some occasions gears jump out of mesh. It will usually be found that this occurs on cars in which the clutch-shaft carries the sliding sleeve, then if the sliding sleeve is too tight or too loose a fit upon its square when the clutch is either withdrawn or engaged, the gears may be carried with the shaft. It should be noted that this cannot happen if the speed lever quadrant is fitted with square slots.

## For Full Power

*By Rodney Drake*

**T**HE real point to be aimed at in designing a motor is the maintenance of compression in combination with complete combustion, for even though it must be admitted that the greater the compression the greater is the initial send-off due to the higher initial temperature, the length of stroke customary in high compression engines does not permit of a sufficient drop in temperature between the heat of explosion and the heat of exhaust, to extract anything like the whole of the caloric value of the ignited fuel.

It is, therefore, clear that, for any given design of engine, there is a compression ratio beyond which there can be no gain, but rather a loss, though if you start designing with a basis of a certain high degree of compression, it is equally true that it is possible from a given weight of metal to extract more power from very high compression than it is from medium or low compression.

Compression and combustion are so closely related that unless the two be in good balance the total efficiency of the motor must invariably suffer.

In planning an engine the designer must first fix the cylinder area in relation to the space of the combustion chamber, because, leaving out for the moment other considerations, it is evident that the higher the degree of compression is, the greater the engine efficiency will be.

The more effective the explosion is when due to high compression the

more perfect the combustion will be, but this theory cannot be indefinitely extended, for a limit is reached at which it is no longer advantageous to increase compression.

Every designer presumably does his utmost to give best results under average conditions, but it still remains for the user to maintain what the designer has designed and the maker has made. The conditions under which the modern gasoline motor works are such that ideals cannot be kept long together, so that the actual driver or user of a car must constantly be prepared to make certain adjustments and effect sundry repairs if the car is to be held up to anything approaching the efficiency line. The grinding of valves and the special attention to piston rings may be cited as the chief features controlling compression and, consequently, power.

The combustion chamber area is in any engine a fixed quantity, consequently the chief source of loss of compression will be through valves or piston rings.

Returning to the question of original design, many motors suffer through defective valves in the matter of area, for to give a big lift to a valve of small area is simply a policy diametrically opposed to the best and acknowledged practice.

A rather interesting point in this direction is, that in a certain motor launch which not long since attained considerable reputation for speed, the valves were duplicated, so that rather



than set up complications by excessive size and area, the total area was obtained with small lift and great efficiency by the employment of duplex valves. The inlet valve naturally has a great deal to do with the efficiency of the engine, and, although the mechanical valve has done much, there is still the automatic valve to consider, its efficiency depending greatly in the period during which it remains open at each suction stroke.

In the case of the automatic valve, several causes are at work to make it open late and close early, all tending to shorten the period of opening, and consequently reduce the quantity of explosive mixture drawn into the cylinder.

Much of the trouble which comes to the actual user is to be traced to the valves or the piston rings, and, although other factors may be at work in the same general direction, it is to the valves and rings that the driver or owner must look to get good results. To take the automatic or spring controlled valve, if this should be too strong, then the valve will not open until the piston is well away on the suction stroke, while if it be too weak there will be a loss of gas at the commencement of compression, for unless the inlet valve be perfectly timed and also quite gas tight, there will inevitably be a loss at both ends. But, quite apart from valves, there are other influences at work, all tending to reduce the quantity of the charge, and likewise the compression, since, unless the charge is drawn into the cylinder in full quantity, the compressing mechanism cannot possibly arrive at the requisite high pressure needed to display the greatest efficiency of the engine. If mechanical design could extend to the gas motor, in which the products of combustion could be en-

tirely expelled on the exhaust stroke, and if, further, it could be possible to leave a vacuum in the cylinder, then the new charge of gas and air entering under pressure might be an ideal one, and the results accordingly.

The whole question is complex and little understood, notwithstanding our boasted knowledge, and, as to compression, we must admit, contends a British authority, that it is the chief factor in the economy of gasoline, and that, whatever the design may be, the necessary power obtainable only from high temperature at explosion is to be arrived at only by proper compression.

#### The Supreme Test

There are friends who come in when  
black sorrow's your guest,

To weep with you over your dead;

Friends who seem, in the midst of  
your heartache's unrest,

To know just what ought to be said.

But the prince of them all, when grim  
Trouble stalks by,

And your heart can do nothing but  
bleed,

Is the fellow who comes when there's  
no one else nigh

And whispers: "How much do you  
need?"

Father, tenderly bless all the friends I  
have known

Who came in the depths of my woe,  
Just to stand by my side when I felt  
so alone,

That I might their sympathy know;  
O I love every one for each handclasp  
and tear,

And aye shall I wish them godspeed;  
But a crown for the one who, when  
none else was near,

Said softly: "How much do you  
need?"

## Cheap and Convenient Storehouse

By T. M. R.

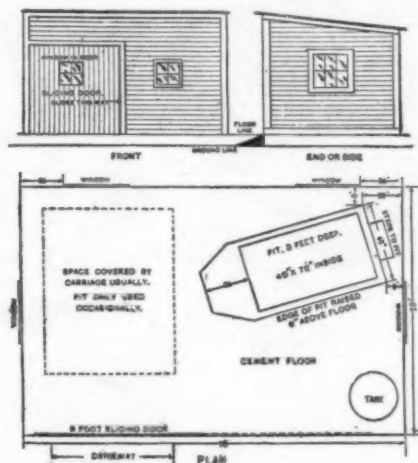
**W**E are indebted to one of our readers for the plans and details of this very compact, complete and non-expensive garage, concerning which he says: "I take pleasure in sending drawings of the automobile house I have erected. The space at my disposal measured about 12 ft. by 18 ft. The plan view shows the general arrangement. It will be noted that the door is on the side, and slides to the right. The windows in the door and in the stable are arranged so as to come together when the door is open, in order to admit light

from the door, and can be run straight out without trouble. The gasoline tank is in the corner, as shown. Having a separate pit gives me the opportunity of housing a friend's car when he comes to spend the night."

### Why Inflation Is Necessary

Had the matter been left to the initiative of the carriage builder or the carriage buyer the world would still be jogging along on tires of steel or iron. Thanks first to the cyclist and then to his successor in road progression and improved vehicleism, the tire of rubber, both solid, cushion and pneumatic, is to-day such a success that even the non-progressive carriage maker, than whom there is no slower traveler over the road of progress, admits that the rubber tire is a desirable equipment even for a horse-drawn conveyance.

Pneumatic tires were first invented in 1846, but they were not a commercial success and were forgotten, until they were re-invented—if one may use the term—by Mr. J. B. Dunlop in 1898. In 1900 the two great pneumatic tire inventions were patented in Great Britain by Welch and Bartlett, both of which patents expired last year; Mr. Welch invented the wired-on cover, and Mr. Bartlett the beaded-edged cover. They were invented primarily for bicycles where the tire was not intended to be inflated very hard, nor required to carry a heavy load, but was meant to take the place of springs and solid rubber tires. Anyone who has a properly sprung car which he does not drive faster than twenty miles an hour need have no fear of expense or trouble if he adopts a good solid rubber tire; and it makes motoring



in either position. The dotted lines show where the car stands generally. I have allowed 6 ft. by 9 ft., quite enough for a large car, and still leave plenty of space to get around to clean, oil and repair. The floor is made of cement, and raised about a foot. The pit is on an angle in the corner, with steps down from the rear end. It is 40 in. by 72 in. inside, has raised sides to prevent running the wheels in the pit, and pointed front end to aid in getting the car in position. The idea of the angle is that the carriage can be backed on

practical and even economical; but at higher speeds a pneumatic tire is a necessity, because the car is continually jumping for a considerable distance off the road, and the elasticity of rubber alone is not quick enough to receive such a shock.

#### **Proper Pressure for Tires**

The pump for inflating tires should always have a pressure gauge upon it, and the tires should be inflated sufficiently if they are to last any reasonable length of time. On light cars about fifty pounds to the square inch is a plenty; on medium-weight cars about seventy-five pounds to the square inch is required, while on heavy cars about one hundred pounds to the square inch is requisite. On a racing motor car tires are frequently pumped to about 120 pounds to the square inch, which is none too much.

#### **The Similarity**

"Pa," remarked Clarence Carburetter, after watching his father's efforts to entertain the baby for half an hour; "it is kinder queer that nearly all babies are born Automobilists, isn't it?"

"Automobilists! What put such an idea as that into your head?"

"Why, although the average baby is always wanting something, nobody can get it for him, because it is always something else."

#### **Pinions and Their Keys**

When pinions are keyed to the shaft the keys are made with the very greatest care, and the pinions are, besides, held on the shaft in various mechanical ways. If, however, a pinion should become unkeyed, thus running free on the shaft, it will thereupon be necessary to dismount the gear, withdraw the shaft and replace the pinion in position and fix the key in its place, taking the precau-

tion, however, to reinforce it either by a piece of tinfoil or very thin tin corresponding exactly with it in size. In driving the key home interpose a piece of hardwood between it and the hammer. A wrinkle to employ, which prevents keys slipping or nuts coming unscrewed, is to immerse them in hydrochloric acid, which rusts the parts in contact and binds them very quickly. When a key slips and there is no space for tinfoil to be introduced this acid remedy can be employed with every assurance of its proving effective.

#### **Foreign Substances in the Cylinder**

Should a valve or the porcelain in a sparking plug break be sure and ascertain if any of the pieces have got into the cylinder. If so, they should be removed before attempting to run the motor, as it does not take a piece of steel or a few chips of hard porcelain a very long time to so cut a cylinder that the cylinder must be renewed. As a rule, cylinder walls are not of sufficient thickness to permit reboring where it is necessary to take off more than the merest suspicion of a cut, and the smallest abrasive substance caught by the piston can make fairly deep grooves the entire length of the stroke.

#### **Hot Stuff!**

"Why do you call the driver of a speedy motor car a scorcher?"

"Because he goes at a hot pace, makes other users of the highways boiling mad, warms up the police, gets roasted in court and then thinks the whole thing is a burning shame."

#### **Not in the World**

"When all is said and all is done"—

The eternal complainer insisted—

"Of perfect autos there's only one,  
And it has never yet existed."



## Keep Your Heat Down

By Terrence Trenholme

**O**VERHEATING is a thing to be avoided quite as much in an engine as in a human being. The avoidance of too much heat in the case of man himself is a thing too well understood to need even mentioning, the prevention or the cure of the same thing in an engine is not so well understood by the average owner. To begin with

of a gas drawn into and compressed in the cylinder, he naturally knows that heat is thereby generated, and so long as the heat is there, he is regardless of the consequences.

Overheating is attributable to one of the following causes:

No water in the tank or circulatory system.



WHAT THE MOTORPHOBE THINKS HE SEES

the degree of heat which the cylinder attains, together with certain of the water pipes leading thereto, is a source of wonderment and anxiety to the new owner of a car. On the other hand, he may have a little of that knowledge which is proverbially a dangerous thing, and, knowing that the power of the engine is derived by the explosion

Failure of the pump, where used, to act.

Air lock in the water pipes, preventing circulation. This is also liable to happen with the thermo-siphon, or natural circulation type.

Insufficient radiation surface.

Using too rich a mixture.

Habitually running the engine with

the accelerator up, even when the vehicle is traveling at a slow speed.

**Insufficient lubrication.**

Certain of the above items also refer to air-cooled motors, particularly insufficient radiation and the use of over-rich mixtures.

Dealing with the causes in the order given, you will find the effect of the no water is to very quickly overheat the engine, usually bringing about the burning of the lubricating oil, which is the first indication given of the overheating. This, however, only lasts for a few minutes, and immediately after the engine has been started. Later, a squeaking may be heard, and if the engine is not at once stopped, the inevitable result will be the piston seizing in the cylinder, thereby causing considerable trouble, and very often serious damage. If it is found that the water has been drained from the circulatory system and the engine has been unwittingly started up, the latter must be allowed to get quite cold before any water is put in, or at least as cool as the hand can comfortably bear when pressed hard up against the cylinder head. If the water is put in when the temperature is higher than this, the cylinder jacket and the cylinder itself are very liable to fracture; in fact, if cold water is put into the engine in its highest degree of heat, fracture is certain to follow.

Failure of the pump to act does not usually involve any very great risks, as there is invariably some water left in the cylinder jacket, and before this is finally evaporated, overheating is distinctly noticeable as being the cause of a gradual loss of power in the engine. If you have reason to suspect the pump is not working up to its proper state of efficiency, it is well to test the circulation by squeezing one of the rubber hose connections on the delivery side of the pump, or to watch the return pipe in the

cylinder heads of the tank, and see if the water is flowing from there. To guard against these risks, it is always advisable to fix a water circulation indicator, a little instrument which, while being inexpensive, is the greatest safeguard one can have against pump troubles.

An air lock in the water circulation is a very troublesome thing, and one which will puzzle the amateur perhaps more than anything else in connection with water-cooling. There are several ways in which this air lock, or air pocket, may be formed. By air lock it is understood that air has been drawn into the water pipes, and forms a complete cushion between two bodies of water, which effectually prevents its flowing. One of the most frequent causes of forming an air lock is putting a fresh supply of water into the tank when there is a small amount of water running in the pipes which are below the level of the tank. The water rushing into these pipes prevents the air escaping, and thus the air lock is formed. To prevent this, if there is a small amount of water left in the radiators and connecting pipes to drain it completely away, put in fresh water, allowing the drain tap to remain open until this flows through. By this procedure the air will, of course, be driven out of the pipes, escaping through the drain tap by the water behind it.

Lack of enough radiating surface is not necessarily an inherent constructional defect, since there are of, course, cases where a larger engine has been put into a car without any addition having been made to the radiators. Therefore, if one is increasing the power of the motor, the size of the radiators should always be increased in proportion to the increase of the power. The makers of one of the most effective radiators on the market give the length of the radiator required to properly perform the work as 7 ft.

per horse power—that is, with the large diameter single tube type. With the new multi-tubular radiator, the length is about 15 in. to 20 in. per horse power.

Using too rich a mixture is sure to be followed by an exceedingly foul exhaust; but as you can only ascertain that this is the case when the car is standing, you should set the air adjustment to suit the atmospheric conditions before actually running the vehicle. In changeable climates, atmospheric conditions may alter to such an extent as to cause what was originally a good mixture to become too rich in gasoline, so that the engine may suffer from overheating from this cause without the user suspecting it until the loss of power is noticeable. Remedy: Providing the circulation is correct, see that the mixture is not too rich.

The habit which many drivers fall into of driving the engine continually at its

top speed is one to be deprecated. The effect is increased wear upon the piston and cylinder, owing to the increase in piston speed. Supposing that the normal speed of the engine to be 1,000 revolutions per minute, accelerating to 1,200 r. p. m., means that, if the engine is habitually run at 1,200 r. p. m., it makes no less than 12,000 revolutions per hour more than it is intended to do. Acceleration is provided to give an increase of power when required for short intervals. There are, of course, some engines which are designed to run at 1,500 r. p. m., but in these the water circulation is accelerated, and extra special attention is given to lubrication to prevent overheating.

The results of insufficient lubrication are similar to those of poor circulation, and the remedy is too obvious to need notice either here or elsewhere, since even a novice is aware of it.

## As a King Might Have Condemned

By "The Britisher"

**I**N celebrating the arrival of April 1 an English paper printed what purported to be an old Act of Henry VIII, designed to discourage the use of a certain "new-fangled, damnable, and devilish engine," which was driven on the highways at the time "at great and outrageous speed, with a most abominable blowing of horns and other instruments of noise, by color whereof the highways have been greatly annoyed and marvelously distempered by excess of dust, and foul and filthy oils from the said engines." This, in many ways, clever fake fooled quite a number of British motorphobes who used the supposed act as text upon which to base new diatribes against the automobile and all connected with it.

The following is the text of the bogus Act:

Statute 6 H. 8, c. 19 (1514).—Forasmuch as drivers and sundry lewd, malicious, and evil-disposed persons, being men of evil and perverse disposition, and seduced by the instigation of the devil, and not minding the hurt and undoing of the King's true and faithful subjects, of their malicious and wicked minds have lately invented a certain new-fangled, dampnable, and dewilish engine, and have by the space of seven years last past put the same in and upon divers parts of His Majesty's realm, and more especially upon the highways thereof, and do in great numbers, some with masks and visors and otherwise disguised, to the intent

that they should not be known, as well by night as by day, use to drive the same on the said highways at great and outrageous speed, and with a most abominable blowing of horns and other instruments of noise, by color whereof the highways aforesaid have been greatly annoyed and marvellous dis-tempered by excessive dust and by the corrupt and noisome airs engendered therein by occasion of the foul and filthy oils in the said engines contained, to the great annoyance and jeopardous abiding in the said highways of His Majesty's liege subjects and by reason of the horrid speed whereby the said engines be driven. His Majesty's peaceable subjects be sore let and hindred in passing along the said highways on horse or on foot, and may scantily even be thereon by reason of the lewd practices aforesaid, and divers other inconveniences have ensued to the provocation and example of evil disposed persons in the like case offending to the great displeasure of the King's Majesty Our Sovereign Lord the King like a virtuous and most gracious Prince nothing earthly so highly weighing as the advancing of the common profit considering the daily great annoyances which have happened in his said realm by reason of the premises for remedy whereof hath enacted that all such persons have such dampnable engines

and now being in the realm have monition to depart therefrom within sixteen days after proclamation of this statute among them shall have been made upon pain of imprisonment and forfeiture of their goods and chattels and if they then so depart then they shall not forfeit their goods nor any part thereof saving always the said engines only, this present statute notwithstanding.

#### One Source of Short Circuits

If accumulator cells are not secured against jumping around in the battery box there is every likelihood of their short circuiting, either momentarily or continuously. This may or may not affect the sparking of the motor at once, but in the end it certainly will shorten the life of the battery. Keep the cells well packed or in some other way secured against movement.

#### Practice Throttling

Never run the engine to its utmost capacity for a longer period than is absolutely necessary, unless you wish to shorten its life considerably. When the car is on the level or running down hill, the speed desired can be obtained by judiciously advancing the spark and reducing the gas by means of the throttle valve. This at the same time gives economical running.



## Valves, Their Value and Vagaries

*By Prof. J. C. Hinman*

**I**N order to keep the paper within reasonable limits, I propose to confine my remarks entirely to the valves and valve mechanisms employed in the internal combustion engines of the four-cycle type.

In the modern gasoline engine it is the universal practice now to open the exhaust valve positively and to close it by a spring. Formerly the induction valve was arranged to open atmospherically and to be closed by a spring, but at the present time the tendency of manufacturers is to operate these valves mechanically in a similar manner to the exhaust valves.

If the induction valves are mechanically operated they are generally placed in one of three positions: (1) side by side with the exhaust valves, operated by cams on the half-motion shaft; (2) on the opposite side of the cylinder to the exhaust valves, operated by cams on a second half-motion shaft; (3) immediately above the exhaust valves, in the same position as atmospheric valves are placed, operated by cams on the half-motion shaft carrying the cams for the exhaust valves, acting through rocking levers. Where the size of the cylinder is such that there is room to place the valves side by side without either decreasing the size of the valves or unduly increasing the length of the engine, this would appear to be the best arrangement, and failing this, the arrangement in which the induction valve is placed above the exhaust valve. There seems to be neither rhyme nor reason for locating the induction and exhaust valves on opposite sides of the cylinder.

In induction valves of the atmospheric type the spring is the important factor, as on its perfect adjust-

ment depends the efficient action of the valve. It is apparent that the conditions necessary for perfect opening and closing are so opposite that the best that can be done is to strike a happy medium, which only produces a medium result.

The atmospheric induction valve has other, though less serious, defects. For instance, it is liable to "stick up" on its seating. It is subject to considerable wear and tear, especially on its washer and cottar, and the controlling spring is exceedingly liable to become impaired by use. Many attempts have been made to improve the atmospheric induction valve, and while all of the attempts have individual merit, not one of them can be said to remedy all the defects of the atmospheric induction valve, or even the most serious of them.

A comparison between the atmospheric and the mechanically-operated induction valve can, I think, be best made by comparing them with an ideal induction valve, which I assume to be one possessing the following essentials: (1) A positive and instantaneous opening immediately the pressure in the cylinder falls to that in the induction pipe, and a positive closing at the end of the suction stroke, at all speeds of the engine. (2) Inability of its action to become impaired or disarranged by use. (3) Automatic adjustment of the time of opening according to the speed of the engine. (4) Inability to "stick up" on its seating. (5) Absence of vibratory action, and consequently diminution in wear and tear and absence of noise.

Dealing first with the opening and closing: As the atmospheric valve only opens after the piston has com-



pleted a part of its suction stroke, a full charge of gas is never drawn into the cylinder, and owing to the lightness of the spring the valve does not return to its seating positively at the end of the suction stroke, with the result that a certain percentage of gas in the cylinder is discharged through the valve, involving a loss both in the quantity of the charge and in the compression, with a relative reduction of power. There is consequently a loss at each end of the suction stroke, beyond which any loss of compression in the cylinder increases the lag of the valve at opening. The time at which an atmospheric valve opens varies with the pressure of the exhaust gases remaining in the cylinder, which pressure varies with the speed of the engine. With a mechanically-operated valve, however, no such variation in the time of opening can take place, as the action is a positive one, and owing to the varying pressure of the exhaust gases remaining in the cylinder, the valve must be set to close, not at the dead center, but some time later in order to avoid opening the valve before the pressure of the exhaust gases has fallen to atmospheric pressure, otherwise the gases will blow back into the induction pipe and reduce the volume of the incoming charge. Consequently, whether the valve is set to open at the dead center or later, a full charge of mixture can never be drawn into the cylinder when the engine is running at a high speed. While the advantages under this head undoubtedly rest with the mechanically-operated valve, its action is by no means a perfect one.

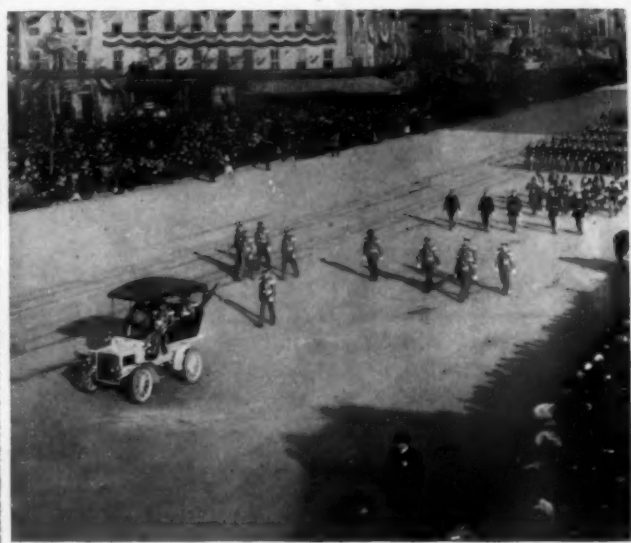
Dealing next with the question of wear and tear. The spring of the atmospheric valve is its weak point, and, as the action depends entirely upon the spring, it follows that any variation

in the tension of the spring at once impairs the efficient action of the valve. The cottars and washers through which the springs act on the valves are also subject to considerable wear, and not infrequently break, owing to the continuous hammering to which they are subjected. With a mechanically-operated valve this hammering action is very greatly reduced, and the only serious wear and tear arises in the parts of the operating mechanism. Any wear in the operating levers means so much lost motion, involving a lap at opening and a lead at closing. There is, therefore, not much to choose between the two types of valve under this head.

In the matter of adjustment. It is well known that with atmospheric valves there is considerable difficulty in adjusting the strength of the spring of the valve so as to obtain the greatest efficiency. Although the same difficulty arises with mechanically-operated valves, the adjustment is much simpler, and, consequently, the mechanical valve has a slight advantage under this head. As regards "sticking up," this cannot possibly take place with a mechanically-operated valve.

Lastly, with respect to vibratory action and noise. All atmospheric valves produce a chattering noise, set up by the sucking action of the piston. This not only diminishes the amount of charge, but subjects the cottars and washers to a considerable amount of hammering, involving wear and tear. With mechanical valves this vibratory action is entirely absent, so that the advantage lies with this type of valve.

It is, therefore, clear that of the two types of valves the mechanically-operated one approaches most nearly to the theoretically perfect valve, but it is at the same time apparent that neither completely reaches the ideal standard,



inasmuch as (1) with neither is a full and complete volume of charge drawn into the cylinder at all times; and (2) both require adjustment.

The construction of exhaust valves and the method of operating them leaves little to be desired, and any improvement will probably be in the direction of water cooling the valves, of varying the time of closing according to the speed of the engine, and of obtaining a quicker opening and closing. Several attempts have already been made to water-cool the exhaust valves, though it has not been successfully employed in gasoline engines.

#### **Well Worth Remembering**

Brakes should not be applied suddenly, but gradually. By being careful to do this you not only save the tires, but also avoid accidents, since the sudden application of the brake may cause the car to skid.

An excellent method of carrying tools on a car is to have a neat little leather handbag provided with a good lock. If this plan is adopted, wrenches and pliers, etc., will not vanish in the mysterious way they do sometimes when the car is out of the owner's hands.

Some amateur repairers, when adjusting chains, do not seem to realize that there is a correct position for the shackles on the back scroll. The top of these side-plates, or shackles, should always be leaning away from the hollow of the scroll.

It is not often that a piston cracks, but it is not an impossibility, so if a case of want of compression should develop, and all the valves, etc., are perfect, remove the cylinder. Then scrape the deposit off the top of the piston, and a crack may be found, the mystery then being one no longer.

In a perfectly new car it may be found that on disengaging the clutch to put in the low gear, the male portion will spin so much that the gear cannot be engaged; the reason of this is that the leather of the cone requires wearing down. This may easily be accomplished by starting up the engine with the low gear already engaged and then letting the clutch gradually in, at the same time stopping the car from moving by the hand-brake. If this is done for a few moments the leather will be worn down nicely.

#### **Look Out for Dented Rims**

Rusty rims and bent ones may be the cause of cut edges in pneumatic tires. To prevent the rims from rusting, the tires and especially the rims should be cleaned from sand and water after every run. Great care should be taken in washing the wheels to have the tires fully inflated with the valve and thumb nuts properly tightened, so as to prevent water from getting into the edges, or through the stud-holes into the interior of the rim. If, nevertheless, water has found its way into the rim, detach the tire at once and carefully dry it, then paint the inside of the rim with some oil paint, so as to prevent it from rusting. A rusty rim, the Continental Tire Company says, is almost invariably responsible for the rotting of the canvas, which, in its turn, is the cause of cutting the edges. The latter is also caused by dented rims. These dents are easily caused by banging against the curb, driving with tires deflated or down on the rims. For this reason, if no other, it is advisable to detach the tires now and then and to examine the rims, so as to remove by hammering any dents that may be there.

## Self-Protection by New Jersey Automobilists

*By Angus Sinclair*

**T**HE State of New Jersey has the longest mileage of well made and properly maintained macadamized roads of any State of the Union. In the bicycle days New Jersey was a favorite outing ground for the lovers of that strenuous sport, and now the magnificent roads, attractive scenery and salubrious climate have made the State of New Jersey a favorite resort of thousands of automobile owners. Not a few people allured by the automobile sport have deserted New York as a residence of late years to live in New Jersey, defying the mosquitoes through the attraction of good roads. New York city is cut off from New Jersey only by the Hudson river, and the people of the great city are good patrons of New Jersey in business and pleasure. A great multitude of people are, therefore, interested in the road laws of New Jersey.

Since the introduction of automobiles the reactionaries of New Jersey, who are opposed to every practice their grandfathers failed to endorse, have been striving for special legislation that would make it hot for people using any form of horseless carriages more luxurious than wheelbarrows. The good sense of the reasonable people of the State, however, prevailed, and two years ago an automobile law was passed by the legislature of New Jersey, which gave such general satisfaction that it became a model for the legislators of other States who wished to be fair towards the owners of motor carriages. The act is believed to be, both from the standpoint of road protection, and from the standpoint of the automobilist, a modern and scholarly scheme of automobile legislation.

Owners of automobiles are required to register their machines with the Sec-

retary of State, for which they pay one dollar and receive a license and a number which must be displayed on the vehicle. A maximum speed of 20 miles an hour is permitted, modified by restrictions in passing through cities and villages. Constables or police officers are not permitted to arrest offenders against the law without a warrant. The penalties for violation of the law are various fines, reaching a maximum of \$50. Repetition of the offense may lead to imprisonment.

That law has worked as well as any act ever placed upon the statute book, but, of course, it had its enemies as every law has that aims to be just to the people at large. The automobilists using the roads of New Jersey acted so fairly as a whole that no cultivation of sentiment against them had become in evidence, excepting in two southern counties, Camden and Atlantic. Through these counties two noted highways extend, connecting Philadelphia and Atlantic City. It appears that the Quaker City is noted for unscrupulous automobilists who delight to defy the automobile law of New Jersey by driving recklessly along the road to and from Atlantic City, Sunday being by choice their favorite day of offense. These genteel ruffians have succeeded in working up a violent sentiment against automobilists in the district. Instead of putting on detectives, to identify the wanton violators of law and bring them to justice, the people of the district demanded indiscriminate revenge on all automobilists and egged on Scovel, their representative, to introduce one of the most tyrannical series of amendments to existing laws ever conceived for the embarrassment of every person owning or



operating an automobile in the State of New Jersey.

The proposed amendment required all automobilists to register annually and pay a tax of \$5.00 under a penalty of \$50. Numbers must be carried on the front and rear of motor vehicles and any country constable was authorized to arrest without warrant. A variety of petty offenses were specified, for which a fine of \$50 could be imposed in nearly every case. Imprisonment in the county jail could be inflicted for nearly every repeated violation of the law, and the spirit of the proposed changes was to inflict punishment at the whim of magistrates or constables loaded with prejudice against automobiles.

The automobilists of New Jersey displayed commendable energy in fighting these drastic changes of a satisfactory law. The members of the State legislature were battered by protests from their constituents, and the various automobile clubs combined their forces to make demonstrations against the pernicious movement.

The New Jersey Automobile and Motor Club, under the inspiration of President Frederick R. Pratt, took the lead in organizing the forces opposed to what were known as the Scovel amendments. The club arranged for a train to carry free all automobilists opposed to the change of law from Jersey City, Newark and other towns to Trenton and back, so that they could give the legislators an object lesson on the class of men interested in automobiling being fairly treated. About 150 persons left Newark on this train and they were joined in Trenton by many others from all parts of the State. They all wore conspicuous badges and Trenton appeared to be invaded by an army of automobilists, seemingly as formidable as were the followers of Washington when they routed the British forces there on

Christmas morning, 118 years ago. A hearing to representatives of these men (the automobilists) was given by the committee in charge of the Scovel bill, and representatives of the people favoring the measure were also heard.

President Pratt, of the New Jersey Automobile and Motor Club, declared that their club was organized for mutual protection and would help to punish violators of the automobile laws.

Mr. R. C. Jenkinson, representing the manufacturing interests of the State, insisted that the pending amendments were of the same character of letters of marque and reprisal which are forbidden by the Constitution of the State.

Mr. Winthrop E. Scarritt said that the amendments would change our ideal law into a whip of tyranny.

Mr. James B. Dill, the noted constitutional lawyer, characterized the amendment as the most pernicious specimen of class legislation that he had ever known.

Among the friends of the proposed changes were several people claiming to represent the Road Horse Association, representatives of the State Board of Agriculture and of other rustic organizations. The trend of their arguments was that the horse had possession of the roads before automobiles intruded upon their peaceful haunts, and that the noisy, evil smelling machines had no rights that horse owners were bound to respect. One ancient rural politician proposed that an amendment be introduced empowering aggrieved rustics to shoot automobile drivers.

The influence of the organized automobilists proved so powerful that the proposed amendments were smothered in committee.

The action of the New Jersey automobilists is well worthy of imitation by those of other States threatened with similar injustice.



## Virginia, Myself and the Chauffeur

By Minnie Mackenzie



**I** MAKE no pretensions of being either a prophet myself or of having the remotest connection by ancestry with anyone who was, so I am not prepared to say that the automobile has absolutely no cause for existence. It may be a very wonderful invention, indeed, though I am not prepared to admit even that. For my part I shall in future confine my local travel to the street car, and feel reasonably sure that Virginia will also prefer that plebeian method of transportation if she ever consents to go out with me again.

Night before last I took Virginia automobile riding.

There is a triple explanation for this. First, Virginia "just loves" automobiles. Second, I admire Virginia. Third, Bob was out of town. Virginia and I cherish different opinions of Bob. I look forward to the evening with bright anticipation. Pictures of Virginia's delight caused me to pay the exorbitant rental of the machine with complaisance. The automobile cost me \$20 for that evening.

That price included the chauffeur, to whose driving I submitted only until we got to Virginia's. It was far from my purpose to have the evening spoiled by any chauffeur's intrusion, I preferred to handle the thing myself. With this end in view I gleaned from the professional driver certain rudimentary facts about running automobiles. As soon as he had landed me in front of the house I

invited him to return to his garage on foot. He demurred. His instructions were that no inexperienced person should be left alone with that particular automobile. I had to make it an object to him to go. I told him, besides, that I knew all about automobiles.

Virginia was on the piazza awaiting my arrival. That was flattering. Deliberately I alighted from my green and white chariot, examined all its parts with the eye of an expert and then mounted the steps.

"Why, Joe," said Virginia with admiration, "I never knew you could manage an automobile."

That was no time to doubt my own prowess. In my first brief lesson, just terminated, I had learned of the existence of the foot brake. I had learned that the wheel steered and that one of the levers let the power loose. I hoped that all would be well.

With my help, Virginia took her seat. She looked charming in her white gown and veil. I followed. I gave the starting lever a jerk. Nothing happened. I battled with the remaining lever. Everything was perfectly quiet. I braced my foot against the brake. Everything remained as before. My stock of knowledge on the subject of automobiles was exhausted and we hadn't budged an inch. Virginia looked on silently.

In haste I got out and retired to the rear of the machine, ostensibly to investigate the trouble, but really to conceal my embarrassment. While



cooling down to my normal temperature, I opened a few valves and other things I knew nothing at all about just to seem busy.

The effect was instantaneous. The machine dashed forward at a furious speed, then stopped short, a hundred yards ahead. Virginia, turning, viewed me with indignation. On their front porches the neighbors were gathering in expectant attitudes. Something must be done. I made the hundred-yard dash in my patent leathers and again took a seat beside Virginia. Ominous rumbles were coming up from under the seat. Evidently an explosion was to be the next incident in our evening.

"I think I have discovered the trouble now," said I, avoiding Virginia's accusing look.

In a cold perspiration I made another play with the starting lever. Wonder of wonders, we moved! But we moved backward. Majestically this eccentric monster retraced its course, stopping dead at the exact spot from which twenty minutes before we had started so buoyantly when Virginia had shown her delighted surprise at my being able to manage the machine. I, of course, did not show how little I knew.

"Virginia," said I, terrified by the glare in her eyes—the piazzas were audibly enjoying us—"there is something wrong with the machinery. If you will let me use your 'phone I'll get the chauffeur to come and examine it."

Fifteen minutes later the professional arrived, wearing one of those "I-told-you-so" grins on his hateful countenance.

"This confounded machine of yours is worthless," I stormed.

"Nothing the matter with the machine," said he. "You don't know how to run an automobile, that's all." With that brutal rejoinder he thrust me ignominiously into the back seat—in an-

other minute we were off amid the cheers of the neighborhood children.

The ride was three hours long. Virginia spent it on the front seat with the chauffeur getting information on how to run an automobile. I might have been a bundle of wraps for all the attention I got.

That was the evening that cost me \$20.

#### To Loosen Tire Patches

When the tires suffer from punctures the chief trouble is to get the necessary patch to adhere to the tube, but later on it often becomes necessary to remove such patches, and if the operation of repairing has been properly performed the removal is sometimes a matter of difficulty. The use of hot irons for the removal of any patches or bandages on rubber goods which have been stuck down by solution and not by vulcanization is recommended by a French chemist. An ordinary domestic flatiron immersed in boiling water for a sufficient time to heat the iron thoroughly is specially commended, since by this means the correct heat is obtained and there is no fear of damaging the tire in any way. In the event of this method not being available or a more convenient one being required, take a clean hammer head or other similar piece of metal, and heat this on the cylinder head, or, better still, on the exhaust pipe. To use the heated object it should be held close up to the patch, or, if the heat is not too great, actually upon it, until the whole of the patch and the surface of the main rubber is heated, when the patch or bandage may be easily peeled off without the use of naphtha or other rubber solvent.

#### Solomon's Successor

"Can't you always tell a beginner in automobiling?"

"Well, as a rule, you can't tell him much."

## When Misfiring Comes

By "The Automan"

**N**ONE of the minor ills of motor-ing is more annoying than misfiring, added to which the cause of it all is often very obscure and difficult to diagnose. Sometimes the trouble disappears of itself, and at other times it defies all of your efforts to remedy it. A fruitful cause of irregular ignition is weakness of the battery, so when misfiring occurs you will do well to begin at that end of the electrical gear and make sure that all is well with the battery.

Next have a look at the other end—the plugs—and then go over the ground between. Are the contact blades rubbing firmly on the cam? Are the tremblers on the coil vibrating angrily? You will find this out by opening the compression taps and turning the engine slowly. Ah! one trembler is only fluttering. You remove the contact screw and find it badly pitted. The rivet on the blade has a minute point fused on it, just opposite the part of the screw that has become pitted. A few strokes of a smooth file, a little adjustment of the contact screw, and you are rewarded with a buzz that can be heard some distance away.

It may be a high tension wire which has touched the exhaust pipe and lost its insulation, or a low tension wire which has chafed against a water pipe, or a loose terminal on the contact breaker. Sometimes the ground return wire gets broken where it is fastened to engine or frame, and then the misfiring will occur intermittently first in one cylinder and then in the other, leading you a pretty dance until you stumble over the cause.

A wipe contact should have ample means of return. The film of oil on

the bearings of the second speed shaft and the other resistance between the little brass inset and the frame of the car are almost certain to interfere with a free return, so it is better to provide some other means of return, such as a wire attached to the plate on which the blades are mounted and connected to a nut on the engine or frame. A good plan is to fix a supplementary blade to rub on the center of the fiber cam so as to make contact on the shaft on which the cam is fixed, and earth the wire from this blade.

If you are sure the ignition is all right and the missing still persists, suspect the carbureter. A partly blocked gasolene pipe will produce the symptoms, so remove the nut which connects the gasolene pipe with carbureter, and try blowing back into the tank with a tire pump. This is the rough and ready method. If it fails, disconnect the pipe altogether, and see if it is clear. The pump will clear it if you can make a joint of some sort, either by removing the valve connection or using a bit of rubber tube, or even wrapping a piece of rubber strip round and wiring it in place.

### Too Much and Too Little

Every owner of a motor car should endeavor to know his vehicle sufficiently to be at least capable of recognizing when adjustments and repairs have been properly made, even if he does not care to make them himself. It is an old truth, and will stand repeating a good many times, that a little attention before starting out will in many cases save a great deal of annoyance, if nothing more serious, on the road. Take lubrication, for ex-

ample. It is not an onerous task to see that each part has its proper supply of oil, yet neglect of this precaution is responsible for a lot of unnecessary trouble. Once let a bearing or rubbing surface run dry, and it will in a very short time wear more than in a season's running under proper conditions.

Worn gear-wheels are almost insatiable in their demands for lubrication, and should be well looked after, as they are subject to considerable friction, and any wear quickly shows itself in lost motion or back-lash. It is better to be a trifle over-generous than too sparing; although no benefit can come of pouring oil where it cannot lubricate anything.

An excess of oil must be avoided in the cylinder, where the oil feed should be adjusted with the greatest care. Where splash lubrication is used it is only necessary to see that the oil is at the proper level and that it is changed at the right intervals; but where a sight feed is used it must be carefully adjusted to the rate of feed recommended by the maker of the vehicle. Too much oil will cause a smoky exhaust and will cover the sparking plug with a sooty deposit, which may eventually cause the engine to miss explosions. Remedy, clean the plug and cut down the oil supply. When you once find where the lubricator works best, always keep it feeding at the same rate, though adjustments must be made in case of great changes of temperature, since cold oil feeds more slowly than warm oil does.

Another trouble that may arise from too much oil is a sticking exhaust valve, a gummy deposit on the stem interfering with its free action. When this happens, the exhaust valve will not become seated, or else will come

down so slowly that the motor will not develop normal speed. This is sometimes a difficult trouble to locate, as the valve may have time to settle into its place before it can be examined. If the motor fails to develop its power after an excess of oil has been used, this is very likely to be the trouble, though it takes a good deal of oil to cause sticking, and it should not occur often. Use the oils and greases recommended by the makers, unless you are an expert and know of something better.

Hot bearings may be the result of lack of lubrication, too close adjustment, or both, and should be carefully watched for, especially when the vehicle is new. Feel the bearings frequently at first, and if any one is found hot, see if it is getting its proper supply of oil. If it is, but runs hot notwithstanding, ease it a little by slackening the adjustment nuts or screws until it turns freely without lost motion. A little time spent in the adjustment of bearings is a good investment, for lost motion quickly multiplies itself. A bearing that is frequently adjusted will last much longer than one that is only attended to when the wear becomes serious.

#### **An Inaugural Idea**

Jefferson was expounding the doctrine of simplicity.

"But," he was asked, "why did you ride a horse at all? Why didn't you walk?"

"That," replied the Father of Democracy, "might have created the impression that I owned an automobile and you know where I'd have been with the farmer vote then."

Realizing the man's great wisdom, they decided he should have a second term.

## What a Governor Is and Does

*By James Penrose Percival*

**M**ECHANICALLY a governor is of more importance than the same thing politically is. Of course, both the mechanical governor and the political one are connected with the machine and the duty of each is to make the machine it is connected with run smoothly and evenly. Despite all of this similarity, however, the mechanical governor has a duty to perform which is far less understood by the public than that of the political one, and for this reason I have endeavored here to make a brief explanation of what and how the governors on a gasoline engine do.

It is one of the natural laws that a swiftly-rotating body tends to fly from its center. This action is taken advantage of, and the centrifugal governor constructed in a very simple manner. As a rule it will be found that this mechanism is mounted upon the camshaft, or layshaft, of the engine, though in a few instances it is attached to the forward end of the engine crankshaft. Whichever shaft it is put upon, however, it will be found to consist essentially of two arms at opposite sides of the shaft, which arms are hinged to a lug firmly keyed to the shaft. These arms carry weights at their opposite ends, and are connected by links to a sleeve, which is free to slide on the shaft. The centrifugal action of the weights is counteracted by means of a spring, the tension of which can be so regulated that the governor may be set to function at any predetermined time. The result is that when the centrifugal force overcomes the resistance of the spring the governing of the engine begins to take place. There are various forms of the centrifugal governor, but all do their work in precisely the same manner.

In the majority of governed engines

of to-day the governor acts upon a valve placed in the induction pipe. This valve regulates the amount of gaseous mixture which is allowed to pass through to the cylinders. Many of these throttle valves take the form of a butterfly valve, consisting of a disk, which will close the induction pipe completely when placed at a right angle to the center line of the tube, but which, when in its normal position, i. e., horizontal with the tube, causes practically no resistance to the passage of the gas, excepting that which is offered by the thickness of the disk and the spindle upon which it turns. This spindle is fitted with an arm on its outer end, and is connected to the governor sleeve by suitable connections, so that when the governor has overcome the first resisting pressure of the spring it gradually closes the valve.

As the engine speed increases the governor still further compresses the spring, and in so doing closes the throttle valve by bringing the disk more towards a right angle position in the induction pipe. It will be seen that this is a very simple and effective method of reducing the speed of the engine, preventing it from over-racing by simply reducing the volume of mixture passed to the cylinder. Other methods of reducing the





cylinder charge are: (1) By means of one circular chamber working within another, the inner chamber having two orifices, which correspond with those in the outer chamber, which is inserted in the induction pipe. By revolving the inner chamber the apertures are varied by the inner one reducing a chamber area. (2) Another means is by inserting a chamber in the induction pipe, in which works a mushroom type valve, the lifting of which regulates the amount of mixture passed.

Many of the engines in the older cars which are still in existence are governed on the exhaust valves. In this case a hit and miss arrangement, controlled by a centrifugal governor, permits the exhaust valve to be raised as usual when the engine is working within its maximum speed limit. When this latter is attained the governor causes a digger to be withdrawn from the valve plunger, so that the exhaust valve fails to be lifted, thus the spent charge is retained within the cylinder. This sufficiently reduces the speed of the engine so that when the next exhaust stroke comes in its sequence the exhaust valve is opened, the charge expelled, and the usual cycle of operations is resumed. This method of governing is no longer used in modern practice.

The ideal conditions for the working of an internal combustion engine are those in which the speed of the engine shall be such as cause it to develop just sufficient power to enable it to run smoothly and at its most efficient speed. When the speed of the engine is reduced the power decreases in relation to the reduction in speed. In like manner power increases with the increase of the speed of the engine. It is to prevent the production of more power than is actually needed for the propulsion of a vehicle that the gov-

ernor is fitted. When the car is running on level ground with a good surface the engine is working in an economical manner, because the governor only allows of the admission of sufficient gaseous mixture into the cylinders to produce the amount of work that the road conditions call for. Then when the speed of the vehicle, and with it the engine, is reduced, as when surmounting grades, the governor at once opens wider and admits more mixture, thus keeping up the necessary speed of the engine.

For the purposes of hill-climbing it is necessary and desirable that the engine should exert its maximum power, and to enable this to be done an accelerator is fitted. This is under the control of the driver either by means of a lever fitted to the steering column or by a small pedal projecting through the footboard, this latter being the more frequent method of operation. This accelerator is simply a combination of such levers, or lever, with wire cable and spring, which prevents the governor weights from exerting their power and actuating the throttle valve, which therefore remains open, allowing the speed of the engine to increase above its normal rate. The engine thus produces its maximum power, which it is very obvious is required for the negotiating of steep grades without the necessity of changing gear. If it becomes necessary to change the gear on account of the vehicle not being able to surmount a hill upon the higher gear, then the governor should be allowed to work, as with the lower gear ratio its normal power would, in all probability, be sufficient to enable it to overcome the remaining portion of the hill. To use the accelerator under such circumstances would only mean unnecessary development of power.

## Why European Automobile Tours Are Popular

**I**T is all very well to be patriotic and announce one's determination to "see our own country first;" but there are a great many obstacles in the way of a perfect realization of this ideal. Practically all parts of Great Britain and the European continent are accessible by motor car—there this is frequently the easiest and most natural method of short distance travel. But in this comparatively new country of magnificent distances, travel by automobile is restricted very largely to certain localities and sections where good roads have been built and other facilities provided.

European highways are so superior to our own, the scenery so varied and beautiful, the cities and villages so full of historic associations and picturesqueness, and the various countries, with all their differences in manners and customs, are so near together, that at the present time no other part of the world can compare with it for an automobile tour. As long as this remains so, the American motorist of wealth and leisure will count a foreign tour as among his privileges if not, indeed, one of his social duties. It is even reasonable to suppose that a great many foreign cars are purchased abroad that would never have been bought by Americans if the same opportunities for long distance tours existed in the United States as on the other side of the Atlantic.

In America, even at this late date, a tour of any considerable length is something in the nature of an exploit. All kinds of roads are likely to be encountered—principally bad—and the distance from one attractive point to another is often accomplished only by hard work through rough and thinly settled portions of the country. The value of the automobile as a means of moving swiftly and safely over the



Cuba, Old and New

smooth highways that form a network over practically all of modern Europe, is more thoroughly appreciated over there. In the course of a year, thousands of motorists make extended tours in every direction, undertaking them the more readily because they are fortified by the knowledge that the roads will be good to the end, and that a reasonable schedule can be maintained from the beginning to the end of the journey.

This is a condition toward which we in America are now dreaming and working somewhat blindly. And fortunate indeed will be our grandchildren should they live to see the realization of all our hopes! Everyone who takes even a few weeks' vacation abroad comes back a positive and enthusiastic advocate of good roads, for he gains a realization, as he otherwise could not, that they are already in existence, and that in poorer countries than our own. He is convinced, too, that the same good thoroughfares can be had on this side of the Atlantic as soon as a majority of the inhabitants demand them and are willing to pay for building them.

The fancied annoyance of a foreign tongue, anticipation of trouble with the customs, or fear of inability to make repairs on the road, have very likely deterred many who would otherwise have undertaken it, from attempting an automobile trip beyond the seas. But all these things are easier than they seem to one who has had no experience with them. English is spoken, or at least understood, almost everywhere on the Continent; and one generation after another has been assiduously cultivating the patronage of the tourist. European governments, like the hotel keepers, are wide awake to the business advantage of tourist travel, and their frontier regulations are not as bad as they may seem. They require principally a ready means of personal identification—usually a passport—and at times a cash deposit on the machine, to be returned on proof of taking it out of the country. A little care and thought before starting will very largely eliminate these supposed difficulties, and one will come in time to think no more of them than he does of the anticipated discomforts of the ocean voyage.

Once accustomed to the routine which must be gone through by every foreigner journeying much on the Continent, it will be taken as a matter of course. Even with this routine, travel by motor car has fewer annoyances than any other means of seeing the country, particularly as one's personal baggage is always within arm's length. With good steamship service between the United States and England and the Continent, one's automobile can be shipped, preferably a steamer ahead, to almost any important port selected as the starting point for the journey. Thereafter most of Europe is at the feet of the tourist who knows how to make the most of his opportunity; and he will usually gain enough confidence in himself the first time to last him, if need be, through several transatlantic tours.

Nor is there in Europe any such general distrust of and hatred for the automobile as exists in various sections of our own country. In France, for instance, no effort is spared among the motorists, who share the reasonable pride of all their countrymen in the advantages and natural beauties of their land, to facilitate touring. Guidebooks, maps and other helps to the stranger are many and accurate. It is a comparatively easy matter for the sojourner to become acquainted with the routes best adapted and the most hospitable to the tourist—much more so than it is as yet in our own country. So a tour abroad is a practical lesson in mutual helpfulness among automobilists as much as it is an object lesson in good roads.

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#### A Good Tip

"Steward, doesn't this launch tip frightfully?"

"Yes, madam; it is setting a good example to the guests."



## From the Personal Point of View



**W**ERE I possessed of the ability of a Scarritt do you know what I would advocate? Well, I'll tell you. I would have a bill drawn and introduced in the various state legislatures which would mighty quickly settle all of this fool chaffeur nuisance and disgrace. "Like master, like man" is an old and a true saying. The reckless, devil-may-care, fine-and-blowed chaffeur is usually employed by the I'm-in-a-hurry-to-get-there-don't-care-what-it-cost owner. The former performs, the latter pays, and the game goes on from bad to worse. Now for a page from the book of our friend the horse. When a horse ridden or driven by no matter whom—owner, jockey or other person—is caught in acts detrimental to the best interests of horsemanship, the animal follows its owner and jockey into oblivion, and in extreme cases not only is the poor brute made to suffer the penalty himself, but all of his subsequent get is also anathema. What is the result? With every temptation to disregard the good repute of racing the owners and jockeys find the penalty

visited upon the animal too severe to make the risk worth taking, and you have as a result a highly reputable state of affairs. What is good for the horse is, in the present instance at least, good for his rival and proclaimed successor.



Let the law of the land then be that makers shall under severe penalties indelibly mark upon each vehicle they manufacture a distinctive number, which number it shall be a felony for any one to attempt to either alter or deface. At the office of the Secretary of State these numbers should be registered along with a

record of the vehicle's owner, etc. When by any one this registered vehicle should be so driven as to violate the laws and to endanger the lives or limbs of either its owners, driver or others, upon this being proven in the proper court of law, let not only the right to drive an automobile be taken away from the driver proven guilty, but from his employer, too. Then let the vehicle itself be prohibited from being driven by anyone over the highways of the State. After the first conviction under this law you'll be surprised to see how

quickly the reckless, don't-give-a-damn driver, and his abettor the let-her-go-and-I'll-pay-the-fines owner ceases to bring danger to the community and disgrace to automobilism. I am not possessed of either the legal acumen or the personal ability needed to put this idea of mine in thorough working order, but I don't mind telling you in the meantime that in the brief outline above is found the safest, speediest and easiest cure for scorcherists any doctor of automobiliousness ever prescribed.



**S**IMPLY because a man wears goggles, a fried-egg cap, a queer coat and a big pair of fur gloves, it is not wise to judge of his physical prowess by these not any too complimentary equipments. I had all of this beautifully demonstrated to me the other day in a crowded crosstown street. Rain was falling and every one was hurrying along when the driver of a brewery wagon pulled up his horses and began shouting so loudly that he could be heard half a block away. Men in the neighboring stores hurried to the doors to learn, if possible, what was wrong, and newsboys gathered from all sides. The driver was directing his talk to a young man who was endeavoring to arrange something which had evidently gone wrong with the insides of a runabout. He had about completed this and was preparing to move on and allow the beer juggler to get through, but the delay was evidently very objectionable to the servitor of Gambrinus, hence the harangue he was indulging in.

Like every one else, the automobilist who was the object of the remarks, was

for the time held spellbound by them. but finding that he was expected to say something by most of the men in the crowd, judging from their looks, he made the observation that all the streets all the time were not made for the Germans. That was enough for the driver. He wrapped his lines around the stock of his whip and slowly began to climb down from his high seat. Once he stopped long enough to look over his shoulder to see that the young man had not jumped into his automobile and run away, and finding that he had not, but was standing on the edge of the curb waiting for him, he at last got his feet on the pavement. A murmur ran through the crowd when the driver straightened himself. He was at least 6 feet 2 inches in height and he was built like a truckman should be, solid from the ground up. His arm was like that of the boss stake driver of a three-ring circus. Worst of all, he was angry and most every one was wishing that the object of his wrath would seek safety in flight and not make it necessary for some one to telephone for an ambulance in a minute or so.

But after removing his goggles and gloves, the young man placed them in the bottom of the runabout and gave every indication that he had no intention of fleeing. He stood so still that every one had a chance to look at him. Like the driver he was well built, but he was fully eight inches shorter. His legs were bowed like those of a cowboy and his arm was not so large as to attract attention. His cheeks were a trifle hollow, and altogether he looked as if he would be an easy mark for his antagonist. The only things in his favor were his eyes; they were gray and they looked straight at the driver.

Reaching the curb, the keg and barrel handler caught the young man by the



collar of his leather jacket and gave him a shake that made his teeth chatter. Then he gave him a slap on the ear that must have made his head ring. Evidently the automobilist had expected more talk before hostilities began, for he had made no effort to defend himself. The slap on the ear, though, brought him to his senses and he quickly squirmed himself loose. Even then he did not run.

The driver wasted no words, but reached for the motor-car man's collar again. Then it happened; no one knew just what, even those who were right in front of the two. The young man must have drawn back his arm; at any rate his fist landed with a smash somewhere on the driver's face. Down slipped the big arms. The giant shuddered, then slowly pitched backward into the mud. It was practically all over. The driver lay like a log for a fraction of a second, then rolled over and rose unsteadily to his feet. His antagonist, waiting like a cat, knocked him down again before he knew what had happened. After this the young man stepped back on the curb alongside the runabout and waited. When the driver rose this time he painfully climbed up on his wagon seat, unwrapped his lines and started off. The crowd breathed a sigh of relief, even if disappointed. No one had to call the ambulance, for the young man replaced his goggles, drew on his gloves and then drove away not harmed in the least. The crowd broke up and one by one the spectators started on about their business. There was very little crowding, for every one had just had demonstrated to him two things; first, that some persons do not wait to talk, but act; second, that one cannot always judge even automobilists by appearance, no matter how absurd they may appear to some whose ideas of costumes are on a par with that of their road rights.

I HAVE not seen it commented on elsewhere, but I have several times noticed that Mr. A. D. Proctor Smith, who steered the Challenger to success at Palm Beach, usually wears with his yachting togs a cap ornamented with the insignia of the Royal Naval Reserve. I am not acquainted with Mr. Smith and so do not know whether he is an Englishman and therefore eligible to a position in the British naval reserve or not, but even so it seems rather odd, to put it mildly, to see him wearing a portion of uniform of the British naval service while he is living in America and do his yachting here. It would be interesting to know, too, whether Mr. Smith wore this same cap and insignia when he went abroad last year as a representative of America to race for the Harmsworth trophy.



CERTAIN it is that few purchasers of automobile "horse power" get the amount thereof the makers tell them they do. This is a horse on the buyer, but it's all going to be changed, thank you. The wise gentlemen at Albany, who about this time each year temporarily forsake their saloons and their pig pens to go to Albany and there make laws for those of us who are unfortunate enough to be neither saloon owners nor hayseeds, and therefore manifestly incapable of governing ourselves, have through one of their number, Senator L'Hommedieu, from Orleans county, begosh! who proposes that henceforth the automobilist must pay more of the saloon and pig sty owners' taxes. To ac-

compish this very laudable desire on the part of our wise legislators, Mr. L'Hommedieu suggests that a yearly tax of \$2 per horse power be placed on all automobiles, which tax he assures his fellow solons will take \$400,000 each year out of the pockets of New York State automobilists and transfer a like sum to the pockets of the saloon keepers and the hayseeds through methods both of them understood only too well. Of course it would be a mere waste of time to attempt to combat anything which the Albany gentlemen might in their superior wisdom decide to inflict upon automobilists, but I would like to know how the wise one from Orleans county, New York, is going to find out what the horse power of an automobile really is. Of course he knows, but I'll be blessed if any one else seems to have the slightest idea how to discover it. We all know what it is claimed to be, what we think it is, what we say it is, what we would like to have it be, but I'll be blamed if a single one of us knows what the horse power of the automobile he owns really and truly is. Maybe Mr. L'Hommedieu will be gracious enough when he is not otherwise too busy up in Orleans county regulating the affairs of the universe to give us an inkling of how he figures it out.



**N**EXT to the noise of the early motors I do not believe any one thing has been so detrimental to the automobile winning favor with the public as the unpleasant odor which too often accompanies the use of gasoline as a power creator. It was of this that Professor Thurston's famous story of the infantile skunk was told. In this case the young skunk was being given

his first lesson in self-defence by his mother. The lesson had not proceeded very far when the chug chug of a motor car sent the mother and the pupil to the safety begotten of a hole in a stone wall alongside the road. When the motor car had finally passed, the mother brought out her offspring and started to resume her lesson, but the young animal, sniffing the aroma of the car which had passed, in a thoroughly discouraged fashion observed, "Oh, what's the use?" He was outclassed, he knew it, and he declined to compete against such odds. Of course this is only a story, and a highly flavored one at that, but it is illustrative of the perfume car and its capabilities.

While proper adjustment of the engine will obviate all, or nearly all of the odor, still there have been many experiments made to secure a satisfactory deodorizing agent, generally without successful results. A recent formula calls for the addition to "220 pounds of petroleum of 40 pounds of water, three and a half pounds of massicot, or lead oxide, and twenty pounds of caustic potash." The mixture is shaken for about an hour and then decanted. It is stated that this fluid will be absolutely inodorous. Should any of you test the formula, I should be glad to know the results, not only in regard to the odor, but also as to the effect of the mixture on the operation of the engine, and the resulting fuel consumption, etc. The man who gave the recipe to me at the Motor Boat Show said this mixture was largely used abroad, and that at the recent motor boat races in Monaco the winning boats used it with great success, not only from an odoriferous point of view, but from an economical one as well. I don't guarantee this, however. I simply tell you the thing as it was told to me, and nothing more.

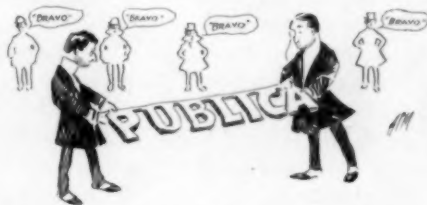


**T**HE fact that one as familiar with transportation as is Mr. William Hoagland, manager of the Manhattan Transit Company, will deliberately say that "the trolley car has got to go, just as the horse car had to give way to the cable and the cable in turn to the trolley," gives cause to wonder how far some of the phophecies of that fantastic writer, Mr. H. G. Wells, are on their way to realization. Speaking of locomotion of the twentieth century in his "Anticipations of the Reaction of Mechanical and Scientific Progress Upon Human Life and Thought," he calls attention to the fact that something of the mechanical possibilities of steam has been known for over two thousand years. In fact, steam was utilized for pumping water before the Christian era, nor was it applied as an aid to locomotion until its usefulness had first been tested in English coal mines. The locomotive of to-day is the stationary engine (so weighty that it had to be put upon rails) adapted to a new end.

As few saw at first in the locomotive anything but a cheap substitute for horseflesh, so few saw in the cars themselves anything but superseded stage-coaches. Americans have become so used to being jammed and throttled while being transported that they have come to regard it as natural. As Mr. Wells put it, "Before every engine trots the ghost of the superseded horse."

Needing no tracks upon which to run, the only restriction to which would be subjected the mechanically driven carriages which, according to Mr. Hoagland, will take the place of cars in New

York, would be the requirement of proceeding along asphalted streets, and hence traffic could adapt itself much easier than now to the necessities of the situation. Another important feature would be that the breaking down of one automobile would not, as is the case with cars, subject others to delay, though in so far as speed is concerned there would probably be but little difference between the two. The fact that Boston is trying the experiment on Tremont street shows that the project is at all events receiving serious consideration elsewhere, though the time is likely to be far distant when the work of the railroad will be done by single motor-driven vehicles running over specially constructed roads. A fact which a million of people in New York city sadly regretted during the time that Captain Jencks of the car marines tied up the entire transportation of the city of New York solely through its being of a kind which made tracks and trains essentials.



**M**Y friends, the British wordsmiths, are hard at it again. The introduction of the motor-driven omnibus upon the streets of London has forced the hardworking wordsmiths to lay awake at nights trying to make their products fit the new conveyance. So far I must confess, admirer of them though I be, that they have not shown with their wonted brilliancy in the present instance. The best, or, if you will, the worst, they have been able to do up to this seems to

have been "Mobus," "Omnicar," "Autobus" and "Publica." There's a lovely four-flush for you to draw to, now, isn't it?

When a man is no good at anything in particular his friends flatter his vanity by calling him "versatile." There are more "versatile" people connected with the sporting side of automobiling than with anything else I ever heard of.



**O**F course it is manifestly impossible for a monthly publication to be a newspaper. You can occasionally make a weekly paper something like a newspaper, but a monthly, never. For this reason the AUTOMOBILE MAGAZINE has never sought to usurp the newspaper's prerogative, but has confined itself to its own especial field, which is that of a publication for the encouragement of the use of the automobile and the making smooth of the way of those whom it converts. But even under the disadvantages the magazine labors in a news-producing way it amuses me to see all of the daily and weekly papers coming out now with scare-head stories about the independent manufacturers, their "basic patent," and a whole lot more, when I told it to you on these pages in the January issue of the magazine. The entire story is now, as it has always been, one which needs but little heed on the part of the purchaser of an automobile. If you want an automobile choose one with absolutely no regard as to whether the maker of it is licensed or unlicensed, or a member of this association or that. The car will be neither better nor worse for all the associations, patent fights or what not, and the buyer of the car need not fear that

he is going to be made by any law to suffer because of the differences between manufacturers, concerning which he neither knows nor cares. Just imagine yourself being on a jury and giving a verdict against a man who had paid an agent or manufacturer the price asked for an automobile, solely on the grounds that the manufacturer of that particular automobile had no license from some other maker or makers of automobiles! You or I would hold, no matter what hair-splitting lawyers might contend, that the innocent purchaser should not be the one to pay for the fights the makers had between themselves, and you couldn't make us give any other sort of a verdict either.

BUSINESS DEPT



EDITORIAL DEPT



**W**RITING the foregoing just reminds me that I believe THE AUTOMOBILE MAGAZINE was the only publication which, while proclaiming itself to be published solely in the interest of automobiles, their owners, makers, sellers, etc., actually proved it was what it claimed to be in this Selden patent wrangle. Some of the other papers did protest a bit against the condition of affairs, but the appearance on their pages of a Selden Association was at once followed by a mysterious paralysis on the part of the editorial thunder raiser's protest apparatus. There was not a single deviation from this being the result in the case of every publication with the sole exception of THE AUTOMOBILE MAGAZINE. When the publishers of this Magazine found that the printing of the Selden Association's advertisement necessitated THE



AUTOMOBILE MAGAZINE being placed in the seemingly dishonest position of first taking a man's money to advertise his goods for sale and then of printing alongside of his advertisement another one which threatened to sue anyone who purchased the first advertiser's wares, without in any way passing upon the ability of the Selden people to do as they threatened, the publishers of THE AUTOMOBILE MAGAZINE declined to continue publishing the Selden advertisement. In doing this the Magazine was the only publication I know of which refused to run with both the hares and the hounds. I do not say that all the other publications were not well within their rights in running both advertisements at the same time, but I do say that I would much rather be connected with the only publication which thought enough of its readers, its patrons and of itself to refuse to be even suspected of selling its opinions or its silence. This line of action is the one on which I think all journalism, even class and trade journalism, should be conducted, though I must confess that it is not the line usually followed even by those publications which are loudest in their proclamations concerning their unpurchasable opinions, freedom from trade influences, etc., etc., *ad infinitum*.



**A**LL this flop doodle business about "master patents," "foundation patents," and goodness knows what else besides, only makes me the more certain that there is something radically wrong with the way the Patent Office is run in

this country. Putting myself in the place of the average inventor, who secures a patent with great difficulty and at relatively high cost in counsel fees and then struggles for years to develop it profitably, it is not difficult to understand that the existing patent law seems in the highest degree unjust and oppressive. As seen from the inventor's point of view, the law's operation may be described as follows: When an application is filed the examiner to whom it is referred searches the records of the world to find an anticipation, and throws upon the inventor or his attorney the onus of proving that the invention is new and not anticipated by the references cited. This often involves a great loss of time and entails an expense which the inventor finds burdensome. He is delayed for months, and sometimes for years, in reaching a mutually satisfactory compromise between his own views of what he should have and the views of the examiner as to what he is entitled to. Unless prepared for the delays and expenses of an appeal from the examiner to the Board of Examiners, from the board to the Commissioner of Patents, and from the Commissioner to the Supreme Court, the inventor who gets a patent at all must take what the examiner is graciously pleased to give him, which, as the rule, is only a part of what he demands.

This would not be so bad if the United States Government, in granting him a patent, conferred an indisputable right to the exclusive use and enjoyment of what the patent described, but it does nothing of the kind. His patent when issued is little more than an official record of a date in connection with the description. It may be assumed to show that the examiners did not find anything in the records which they considered an anticipation of the invention



claimed; but their records are not complete nor is their judgment inerrant.

There is much in the state of the art which the records of the Patent Office do not show. For this reason the validity of a patent is always in doubt until it has been tested by a suit and sustained by the court of last resort. This being so, the inventor, naturally enough, asks what all this haggling and hair-splitting of the examiners amounts to, and why carefully drawn claims should be trimmed and narrowed to suit the whims of the hypercritical young men who pass on applications. If the inventor must establish his rights in the courts to give them value, he should choose his own weapons, and the patent on which he brings suit should be the one he asked for and not the one the Patent Office sees fit to issue him.

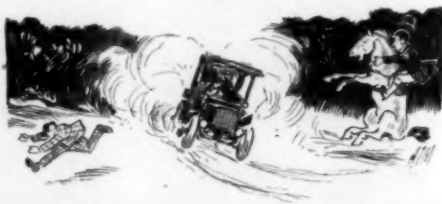
Hence the conviction of the inventor that he is wronged when his application is amended or rejected, his growing doubt of the value of official examination, and his confident belief that if he has to establish his rights, either as plaintiff or defendant, he should not have an emasculated patent to represent his invention.

In this view of the matter the inventor is partially right and partially wrong. The difficulty from which he suffers is, of course, a very different one from that which he has thus far recognized. It grows out of the fact that, as the rule, the specifications and claims filed in his name bear about the same relation to his invention that the earth and the fullness thereof bear to a half-acre potato patch. Generally speaking, his invention is a concrete thing, and his original idea of the patent he wants and expects would describe and claim what he has invented.

The idea of his patent attorney, however, is very different. Viewed from his standpoint, his professional duty to his

client is to discover in the invention the germ of a specification and series of claims which he can expand as a grain of gold is spread out under the gold-beater's hammer. If clever and qualified, he begins where the inventor's work ends, and so broadens the invention that in most instances the inventor needs to have the drawings and specifications explained to him before he signs the application. They not only cover his invention, but a great deal that he did not invent and never thought of.

The application is drawn not to protect the invention, but to anticipate as far as possible the litigation which a patent broader than the invention to which it relates may be expected to invite. Naturally, this has put the Patent Office under the necessity of formulating rules for the protection of the public interest and of enforcing them rigidly and impartially. Any other policy, so far from being advantageous to the inventor, would quickly destroy what value patents now have as *prima facie* evidences of invention, and lead to such expansion of claims as would leave nothing uncovered in the heavens above or the earth beneath or the waters under the earth. But view it as you will, it all comes back to the old definition of a patent as being a license to fight, only this and not much else.

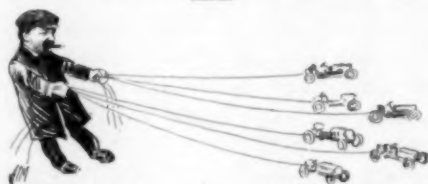


**D**ENY it as we may, the truth is that very much of the intense dislike many people have of the automobile and all connected with it has its origin entirely in utterly indefensible actions of a few automobilists who

ride air shod over everything in their one overweening desire to see how fast or how far, or both, they can go. There are, too, many innocent offenders who add fuel to the flame of automobile dislike. These innocents have in many cases never before been drivers of any other sort of vehicle and therefore do not realize that other road users, who travel at a much slower pace than they do have by long established custom come to use the roads in a careless manner. They are not very particular as to the rule of the road, and very often take corners on the wrong side. The automobilist may justly contend that these people have no right to do these things, but that is not the light in which to look at the matter. To begin with, automobilists themselves are frequent offenders, and, apart from this altogether, considering that their means of transport is a new one, and that great hostility exists against it, they should take into consideration the existing state of affairs, and, seeing that other road users are careless, should recognize this fact and drive their cars all the more circumspectly.

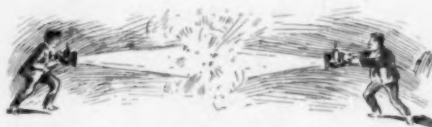
Automobile owners should try to put themselves in the position of these other road users, and they could not do better than try the experiment of riding a bicycle or driving a horse-drawn vehicle in the slipshod way which is common practice, and then note how they will feel when a motor car comes round a corner almost on top of them at better than railroad speed, or rushes towards them, the driver blowing his horn like a squawking Gabriel. Eventually the public will become educated, and will use the roads intelligently, but such education cannot be accomplished all at once, and in the interim automobilists will not bring the desired end nearer by en-

dangering the lives of other road users. I have already said that motorists themselves are often offenders as regards the rule of the road. From experience, I should say a great proportion take corners on the wrong side of the road, and allow as little room as possible to others when passing. They, therefore, are not free from what they complain of in others. Apart from this, drivers of motors are very apt to miscalculate the speed at which they are driving, and they have but a faint conception of the terror which it causes to many people to have a car flying by at a great pace. There's two sides to everything even to this one of automobile hatred.



**W**HEN I go to the theater and see some particularly gorgeous production move satisfactorily along, my admiration goes out not to the player folk who have "their entrances and their exits," but to that invisible, unknown and unappreciated man, the stage manager, to whom most of the success of the performance is due. Along pretty much the same lines I have grown to admire the ability and unobtrusive work of Secretary S. H. Butler, of the Automobile Club of America. Here is a man who seems capable of doing almost anything and doing it well, no matter what he is called upon to undertake. It never seems to flurry Mr. Butler, no matter whether he is engineering an entertainment at the club, a road race, an endurance, a hill climb or any other sort of a function. You are always sure to find Mr. Butler a gentleman who is in thorough mastery of the situation, and both

able and willing to do what he can for you in any way possible. There may be greater diplomats than Secretary Butler, and I presume there are, but in a rather varied experience in such matters I have never met another man in his position who so completely and satisfactorily fills the manifold requirements of a club secretary as does Mr. S. M. Butler, of the Automobile Club of America.



**I**F the Automobile Club of America wants to promote a competition which would be as beneficial to automobilists as it would be instructive and picturesque as well, I would like to suggest that the club conduct a really scientific test of automobile lamps, lighting systems, etc. Here is an extremely interesting subject which would stand considerable light being thrown upon it, and that's no joke, either. Of course I know that such an affair is not easy to plan and carry out properly, but the reputation of the A. C. A. is that difficulties do not keep the organization from any undertaking once it has decided to embark therein. The difficulty of arranging this lamp contest will primarily be concerned with the points for the judges to consider. These should not be narrowed down too much, but should be wide enough to be conclusive to car owners that makers entering lamps in such a trial were confident as to the merits of their wares. The power and steadiness of the light given are essential considerations; economy in use, the effect upon other users of the road, the direction of the light, are all important to be considered, apart from the quality of the workmanship of the lamp itself.

**T**HE entire community gave a sigh of relief when the remaining unnobbed newspaper man in Florida discovered himself and modestly printed the story of his virtues in the same weakly which had originally announced that with the sole exception of the weakly's publisher every other New York newspaper representative in Florida during the recent races at Ormond had sold himself for a mess of pottage and cottage to do what he could by maiming, poisoning, stealing or filching to prevent some one, presumably the racing men, from winning. With the new self-discovered, unnobbed the number of really honest, upright and capable newspaper men in Florida has been doubled and for this let us indeed be thankful. It might have been worse, it might have been kept a solus affair by the publisher who first claimed the honor, but now there are two. Glory, hallalujah!



**G**O sell your electric car, quick. It's all off. Willie has put the Imperial kibosh on the car which is propelled by juice, and when Willie condemns the rest of us simply bow in mute admission of his superlative wisdom. In Emperor William's recent declaration that "electric cars are the enemies of humanity," one gets new proof of that monarch's instinctive caution in the use of language, and one appreciates afresh how careful he is in reaching conclusions, how closely he looks at every side of a question before he expresses an opinion, and how absurd were the fears

once entertained that his impulsiveness might some day cause trouble for his own people and others.

Of course electric cars are the enemies of humanity. The consequences when they run over a human being are serious; when it is a fair and square runover they are almost always fatal. Electric cars of the public cab persuasion are particularly vicious, so the papers say. The papers have accused one of chasing a victim into a side street and up his own doorsteps, finally to slaughter him there. Not only do they dismember, eviscerate, wound, or contuse, as opportunity offers—the general public daring to dispute their right of way—but they often treat the paying passenger no better, utilizing for this nefarious purpose such devices as collisions and derailments, so the papers aver. All of which must be accepted as sufficient newspaper evidences of a wicked and untamable nature thoroughly justifying the Kaiser's denunciation.

To be sure, even the papers must admit the electric cab has its more genial moments. It doesn't kill quite everybody in the streets through which it passes, and a determined advocate—the lawyer hired to defend a damage suit, for example—might expatiate at length on the building up of suburban regions, with all the betterment of city life involved, that has followed the introduction of the electric cab's elder brother, the trolley. He might even go further and say that cities as they are now known would be impossible without this means of transportation over their interminable distances; but these are small matters and of no importance. They must be, since Emperor William ignores them and contents himself with the broad statement that electric cars are the enemies of humanity.



**W**E make history quickly these days and in nothing more quickly than in automobiling, hence happenings of only a few years since pass out of mind even though they be epoch-making ones. I had occasion not long since to consult New York police records and while doing so I ran across a couple of records which I think should be saved from oblivion. Now that the sensational press is each day filled with lurid accounts of the arrest, browbeating, conviction and fining of motorists, I doubt if there is a man in this country who can tell who was the first owner of an automobile in the United States to be arrested for scorching. That this may not be a mystery any longer permit me to tell you that the honor, if such it be, belongs to James T. Donohue, who on July 11, 1899, was arrested for going so fast with a "devil wagon" that even Mr. Donohue admitted he was "moving some." The first woman to appear before the New York police to explain why she hired a chauffeur who drove faster than a dog-trot on Fifth avenue was Mrs. Arabella D. Huntington, the widow of the great railroad magnate. Her driver, Francois de Chasney, was arrested by the ever vigilant police and charged with breaking fifty-seven varieties of records, ordinances and I don't know what else besides. At the police station the sergeant asked Mrs. Huntington if she could give security for bail. When her anger subsided she quietly replied, "Yes, take my house on Fifth avenue. I think it's worth \$3,000,000. Is that enough?" The sergeant thought it was.





**R**ECENTLY a friend of mine, who had but just returned from a three months' motor-car tour of Europe, dropped in to tell me of the pleasure of seeing foreign lands in this, the most satisfactory of all fashions. In the course of his story he asked me if I knew which was the most motor-travelled bit of highway he had seen abroad. I made two or three wild guesses, based upon a knowledge gained through a bicycle tour over these, taken more than twenty years ago. My knowledge was very deficient. I did not guess even the country the road was in, much less the road itself. To relieve me from any further futile attempts the returned wanderer informed me that the road most traveled by cyclists and automobilists is, without a doubt, the road leading from Haarlem to The Hague, Holland. Along this road is the famous tulip-bulb country, a strip of about twenty-five miles in length and two miles in width. When in bloom these fields cannot be surpassed in beauty, and no one who has seen them at that time but will go into raptures over the scene. It is estimated that 25,000 cyclists pass along this road every day and more than 1,000 automobiles. The Queen herself is to be seen almost daily on this road, and the wealth and aristocracy of the Netherlands has been quick to follow her example. Imagine driving a car through a tulip bed twenty-five miles long by two miles wide! Is it any wonder that such a drive is the most popular one in all Europe?

It was at a regular sitting of the Nail Keg Club at Dogtown, N. J.

Silas Skeezeicks, the renowned wit and arranger of the world's affairs, was speaking: "By heck, thar is one horse no blamed automobile can scare," he said. "What is that, Sile?" inquired the chorus of keggers. "Why, a sawhorse. I threw one in front of a 'red devil' this forenoon and wrecked the whole blamed machine." Whereupon the keggers began debating upon the mistakes of the Czar in his having failed to order Kuropatkin to have supplied himself with an extra supply of ikons before he met Kuroki.

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There was a man in our town  
And he was wondrous wise;  
The ever-changing touring routes  
Ne'er caused this man surprise;  
For when he went to take a ride  
He was so fearful bright  
He took the route he didn't want—  
And mostly struck it right!

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**I**T must come pretty close to being a shock to those poor, deluded calamity howlers, who in season and out have so long raised their voices in lamentation and protest against the bicycle people, to see virtually all the automobile business, sport, journalism and about every other progressive or aggressive feature of the trade or the pastime securely lodged in the hands of the bicycle people. Of course no one but the calamity howlers object to this, because it is purely a question of the best man winning out despite prejudice and protest on the part of an insignificant portion of the trade and the press who for obvious reasons were not capable of seeing further than the length of their noses. The crowning climax of the bicycle control comes with the election of an old Boston Bicycle Club man, Elliot C. Lee, as president and Amos L. Batchelder as secretary of the A. A. A., an organiza-



tion which its most fervid admirers must admit has not prospered under the officialism and management of those who, whatever else they were, certainly were not "bicycle people." Now watch and you'll see the "bicycle people" make the sport go just as they have made the trade go, the A. A. A. will be a living, capably managed, aggressive, live organization and it will be so solely because it will be officered by men who learned how to do such things in bicycling and before many of those who attempt to cry down the "bicycle crowd" had arrived in this country or ever dreamed of an automobile and the prosperity it would bring them.

**R**EFERRING to President Lee in the foregoing reminds me that he has, or rather he did have in his bicycle days and I assume he continues to have, a hobby which as he becomes better known to automobilists outside of New England will cause considerable interest. Mr. Lee has long been a collector of celebrated timepieces both ancient and modern, and his horological collection to-day is perhaps unequaled by any other privately owned one in this country, in fact I do not believe there are many public collections which are as perfect as his. It used to be a regular performance in the old days to casually ask Mr. Lee if he had the time. This was usually followed by his consulting a watch the like of which you were sure never to have seen before. Questioning the accuracy of the timepiece while it brought a pained expression to Mr. Lee's face was quickly followed by his bringing forth another equally unique time-teller as proof that the first one told only the truth. I never saw the occasion when Mr. Lee couldn't produce these proofs in quantity sufficient

to convince any doubter, and I never saw him produce the same watches when on some other day the same performance was gone through with. There's one thing you can bet any amount you want to on and be sure of winning, and that is that so long as Elliot C. Lee has anything to do with the A. A. A. there will never be any question about the timing being correct to the utmost fraction of a second.

We greet the driver who finds no fault  
With praise, and all the rest of it;  
But the kicker whom we ne'er exalt  
Still, somehow, gets the best of it.

**S**OMETIMES it takes a considerable time for a foreign fashion to reach here and become an American fashion. Usually the arrival and the adoption are things of but a few days, and so I am puzzled to understand why we haven't had any balloon chasing over here yet. The only efforts in this line in America have been those put forth by the confiding investor who in the early days of the automobile business listened to the siren tales of the promoter of how fortunes were to be made in a minute by manufacturing automobiles and having given his money to the promoter saw it go up in the air higher and farther than any balloon ever went. The subsequent chase for the remains was exciting enough, perhaps, but not sufficiently enjoyable to warrant the performance becoming a craze. As Americans have taken kindly to chasing a "fox" made from a herring or a bag of aniseed dragged over the country at the heels of a horse to lay the scent for the poor deluded "fox" hounds to follow and be in their turn followed by "sassiety," for the life of me I can't see why such real sportsmen as these brave herring hunters

are should not take to balloon chasing. Here is all the excitement of a real fox hunt. Off go the balloons, they disappear at times in the clouds, sometimes between and behind hills, and altogether it is not easy to keep them in sight. Knowledge of the roads, the country and all the faculties which are involved in finding your way across a district which you do not know, and which originally formed one of the most important gifts of the real hunter, are called into play. There is excitement, there is competition, and the desire to be in at the capture, and there are also the delights of speed which enter largely into the pleasures of a good run with foxhounds. Last, but not least, there is no cruelty. We are constantly told by huntsmen that the fox likes being hunted, but I am sure this myth can only be believed by those who have never observed a hunted fox close at hand. And certainly no one would allege, though he often dies game, that the poor little animal can enjoy the usual conclusion of a hunt. Perhaps the horses do enjoy it, but it often involves serious suffering to them. All these unpleasant elements are absent from the balloon chase. The balloon sails away calmly and serenely, and until actually "collared" the occupants do not even experience the slight chagrin of finding that the automobiles which have chased them have been too smart for them.

Certainly, considering the advantages on the side of the sport I have pointed out there are many real good reasons why the game should be introduced here. It will be urged by some that the speed at which the cars would tear along would be in excess of the legal limit, and otherwise dangerous. This, however, is pure assumption.

Balloons very seldom set forth in anything exceeding a 20-mile wind, and any inconvenience to the public in balloon chasing would be obviated by limiting the number of cars allowed to pursue each balloon, and starting the balloons at a sufficient interval to prevent the two "hunts" mixing. With attention paid to these two points, the only possible objections are overcome. Certainly, as one of the most amusing forms of recently invented sport, and as one of the most innocent sports, too, this bit of foreign sport should be transplanted.

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Records of great racers all remind us  
We could make our lives sublime,  
If we only had the money,  
Pluck enough, and lots of time.

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**I** APPROACHED our old friend, Timmy the Truckman, and sympathetically and silently stood by his side until his purple color had subsided to his regular rich mahogany and his rhetoric had a trifle more coherence.

"I firmly believes," said Timmy, with an air of absolute conviction, "I firmly believes that when all these here mounted cops go plumb to h—ll, they'll all turn into hosses and us truckmen'll ride 'em!"

He paused, and it was evident from his enraptured expression that this beatific vision was even then passing before his mind's eye.

"And," he added, in an awed and terribly significant whisper, "Heaven help my hoss then!"

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No man even from the vantage point of a seat in a touring car can look a savage dog in the face and accept the theory that hydrophobia is purely an imaginary disease.

THE OUTSIDER.

## What the Man on the Road Sees

By "Flatcap"

I AM not a whole lot of a preacher, in fact I think I can in all sincerity say that my province lay more in being preached at rather than in doing the preaching myself, but if I were going to deliver a sermon to my friends in the trade I think I could find a splendid text in the man who builds an automobile or something connected with it, and then timidly sets himself down and wonders if the affair will sell itself. He might just as well expect it to make itself. The people who expect the motor vehicle to carry them to a fortune without effort on their part are growing beautifully less from two causes—starvation and bankruptcy.

If you would be successful in this fast moving game of automobile trading you've got to have faith in your own ability and in the merit of the goods you make. Nothing is so essential to a leader in any kind of society or business as self-confidence. Of course, nothing can be accomplished without effort, but without confidence in one's ability to succeed there will be no effort. Business success has resolved itself into a matter of looking out for number one, and if one has faith in his own works he makes for himself a position at the head of the procession and retains it by right to possession. But he'll never do it in ten thousand years if he don't show his belief in himself and his goods by

advertising them first, last and all the time.

In designing or in building an automobile don't hang to theories that hang fire when they are aimed at facts.

Advertising Manager Megargee, of the E. R. Thomas Co., believes in hanging his banners on the inner walls, not the outer ones, like the poet advised. Mr. Megargee is too old a bird to be caught by the outside game, hence he's sending his best friends a very handsomely framed colored picture of the Thomas Flyer, and if the number of Mr. Megargee's friends is shown by the number of those who have hung the picture up in their offices then he's to be congratulated not only upon their number, but upon their prominence as well, as I have seen that picture in about every office I've been in for the last six weeks, and when you chase advertisements believe me you go into an awful lot of offices in six weeks.

Many good men grow poor dreaming of millions in thousand-dollar towns and planning Queen Anne garages for Mary Ann neighborhoods.

The first time you want to convince yourself as to the amount of knowledge about an automobile which you

should possess, but don't, go up to West Fifty-second street, New York, and make the acquaintance of Mr. J. S. Heller. Take my word for it, you'll never regret meeting a gentleman who really does understand the intricacies of the imported automobile as no other one whom I have met seems to. It had long been somewhat of a mystery to me how a man like Heller had entered the automobile business. I knew he had for many years been head of a big commission house as well as general manager of a big New Jersey chemical works, but I couldn't see how either of these had caused him to take hold of automobiles. Stifling the modesty which my friends all know is my most unfortunate failing, I scraped up enough courage to put the question to Mr. Heller himself. It was the old story: a pleasure trip to Europe; a motor car tour; a study of the new means of transportation; a home-coming with a new car which soon won the hearts of his friends and at last a yielding to their importuning and the handling of the cars for their makers throughout North and Central America as well as the West Indies. But don't run away with the idea gained from this brief summary that Mr. Heller just allowed himself to be forced into the business by his friends, he'll do a lot for those he likes will this same Mr. Heller, but even for them he won't rush into a business proposition with his eyes closed. When it came to choosing the car he wanted to bring to America Mr. Heller says he went down the line and critically examined as well as tested the best examples of foreign made cars. Good ones he found in plenty, but in all of them the two great faults seemed to him to be present—complexity and inaccessibility. What Mr.

Heller wanted and what he believed all his fellow Americans wanted was a car which would take you where you wanted to go, bring you back when you wanted to return, and still not be so complex as to defy understanding and handling by anyone who had not served an apprenticeship in the factory where the car was built. Perhaps you think that it would be easy to find a car which would fill these seemingly simple requirements. Well, it isn't. Mr. Heller says it took five months of the hardest kind of looking before he found himself in Belgium and riding in a car which the makers had been successfully turning out since 1895. At last he'd found the car he was looking for. When he had driven the car 500 miles in two days without a single adjustment of any kind, and when he'd seen its 40 H. P. motor capable of imparting a maximum speed of seventy-five miles an hour to the car easily throttled down to a speed of four miles when traffic called for slower progress he began to think that the Pipe was the long-sought-for car. Subsequent tests and critical examinations confirmed this idea and so it was that America is indebted to Mr. Heller for a chance to pass judgment upon what Mr. Heller is not slow to declare is the nearest to a perfect car made. So convinced is Mr. Heller of this that he voluntarily guarantees for six months every car bought of him against any imperfection whatsoever in manufacture, besides which he stands ready to make good any defect of whatever kind which may develop after a longer period should the cause of it in any way be due to improper manufacture. To support any guarantee that he may make concerning the good qualities or the performances of the Pipe car, Mr. Heller tells me he is willing to give

bonds to that effect where the purchaser may desire the additional security thereby afforded. Seems to me you couldn't expect much more for your money than that, eh? One of a number of little conveniences I noticed on the Pipe car, Mr. Heller showed me, was a magnetic clutch bearing the name of that greatest of all cup drivers, Jenatzy. By means of this clutch the jar and jolt of starting is entirely eliminated, as indeed is all possibility of slipping and replacement of leather facings made so familiar by the ordinary clutch, while its action is quite as simple.

The busy agent is never too busy to welcome the prospective buyer who has more money than time.

I don't care what anyone says there is and there always will be a fascination and a satisfaction in knowing the speed at which you are traveling on a motor car which makes the possession of some reliable indicator for this purpose an additional pleasure in the pastime of automobiling. There is, of course, the more utilitarian point of view from which the instrument may be looked upon as a guide to the legal limit of speed. Entirely independent of personal estimation, its indications should be unanswerable, and the law-abiding motorist will, no doubt, suffer a conscientious twinge as the pointer is seen to enter what might be called the "police" portion of the scale. It is just the question of what might be called the "prosecution" portion of this scale in any particular locality that discounts the real value of these otherwise most useful instruments. Doubtless the utilitarian aspect is that which causes many to look leniently on the first cost of such an instrument like a Jones speedometer, which, being naturally somewhat expensive, might

otherwise excusably be regarded by them as a dispensable luxury. So serious is the annoyance, expense and notoriety, attendant upon being charged, however, for exceeding the speed limit, that possibly many ardent drivers may regard the preliminary outlay of a smaller sum of money in a speed indicator as a means of saving their pockets from a much greater deflection later on. Be wise, get your speedometer and know, not guess, what you are doing.

Said the odometer to the driver: Remember, old man, no matter what happens, you can always count on me.

About now you are sure to read in the daily papers how this baseball pitcher or that, finds his "glass arm" is bothering him considerably in his preliminary work for the great American game wherein later on the owner of the arm will stand forth the admired of ten thousand fans as he poises himself in a cork-screw-like attitude for a moment and then with a wild swoop sends that "glass arm" of his around in some peculiar fashion which terminates in sending a ball over the plate without the batsman being able to lambaste it with the club he stands there awaiting it with. That's one kind of a "glass arm." Here's another. Sit for some time with your hands clutching the steering wheel of an automobile while the vehicle itself proceeds on its way over streets and roads, and when you are through you'll have a "glass arm" of your own and you won't need to read about those of the baseball players to make you aware of the arm's possession not being a very desirable acquisition. Right here is where my friend E. J. Willis comes in. He showed me a contrivance the other day which really seemed to me was one of those



"long-felt want" fillers you often hear of but seldom see. The affair itself is a very cleverly arranged wheel, in which a leather and rubber diaphragm inserted between the hub and an inner ring, tends to eliminate vibration of the car. While having this advantage, Mr. Willis says, that the wheel, under actual test, has shown superior strength to the ordinary type wheel. Perhaps there may be some place where vibration is a good thing, but if there is you may be sure an automobile isn't the place, so if Mr. Willis can even lessen vibration to say nothing of eliminating it automobilists should erect a monument to him after they had made him a millionaire by bestowing their well deserved patronage upon him.

How long do you think it would take you to attach or to remove a clincher tire from the rim of an ordinary automobile wheel? If it has ever been your misfortune to try and discover this by experimenting you probably know how long it takes you not to be able to do it, even if you failed to learn the correct answer to the query I have propounded above. I cannot answer the question myself, so I suppose I shouldn't expect you to, but I'll tell you that I did see a man do the trick in twenty-three seconds! No, neither dreaming nor lying; saw it done with my own eyes and timed it myself. How was it done? Well, I'll tell you. Out in Chicago during the show somebody started this discussion and in the midst of the argument which followed a quiet spoken gentleman, unknown at the moment to most of us, observed that he usually performed the experiment in about 30 seconds! The snort of derision that went up from the debaters sounded like the exhaust from a hundred-horse-power motor with the

muffler off. But the snort never worried the thirty-second man any more than if it had never been snorted. Then discussion became warmer and the usual American method of settling the question was resorted to—a bet was made that no regulation automobile tire, once it had been properly fitted to the ordinary type of automobile wheel, could be taken off from the wheel uninjured in anything like thirty seconds. Preliminaries having been arranged we all adjourned to the apartments of Mr. Marsh at the Great Northern Hotel. Here Mr. Marsh had a Bryant wheel equipped with a rim of the same make. The first attempt to remove the tire took 23 seconds, while putting the tire back again consumed 29 seconds. There wasn't any room for argument. The loser paid the bet and invited the crowd downstairs. Perhaps you will be interested to know how such a lightning-like performance was made possible. The whole secret is in the Bryant rim, which consists of a steel band with a bead at one side that can be attached to any wheel. The bead for the opposite side is a detachable ring, which slides off or on, but which is held firmly in place by a split ring, acting as a key. The whole affair is so simple and so perfect you marvel at its not having been thought of years ago. There are no bolts or nuts to rust, or anything to get out of order, and absolutely no tools are required to put the tire on or off. I miss my guess if here isn't a Bryant who will come mighty near being elected by appreciative automobilists in the near future.

When the enthusiast starts talking for the automobile or against it, it will usually be found that he belongs to one of two classes—he either never stops to think what he is talking about

or else he never thinks to stop talking about it. Either way he's a blamed nuisance.

There won't be any possible excuse for the man who desires to get out of sight of his own garage not knowing where to go and how to get there this summer. I understand that the Hartford Rubber Works is bringing out the most accurate, up-to-date and comprehensive route book for automobilists that has ever been issued. This is the right kind of advertising since it not only keeps the advertiser ever in the mind of the buyer, but it keeps him there backed by the buyer's feeling of gratitude which is considerably more than half the battle when it comes to selling him your wares. The system which has been adopted by the Hartford people to insure absolute accuracy in their maps and road descriptions is exceedingly novel and one which cannot fail of producing the best possible results. First a map of the United States was procured and upon it was designated by small dots the actual location of each of the hundreds and hundreds of Hartford agents, then this map was cut up with one of the dots in the center of each square. The squares were then sent to an expert map maker and enlarged to many times their original dimensions. To each agent was sent the square, outline map of the district he was the center of, along with a list of directions and questions. When these directions had been followed and the roads in that section all drawn out on the map square and the questions concerning the roads, etc., duly answered, the map was returned to the Hartford people and again passed into the hands of the expert map maker. When his work was done it was only necessary

to properly group the hundreds of maps, photograph them down to a handy size, and there you had the only real, absolutely correct and up-to-date automobile maps made by automobile users for automobile users that were ever made. Simple enough, you say? Oh, yes, simple as rolling off a log for you and I to talk about, but at that it has taken several hundred men almost a year to carry out the idea simple as you and I think it is.

The foregoing reminds me that the Pope Company are presenting to those who apply for it at the company's new and model garage, Broadway and Fifty-fifth street, a vest pocket book of the same general idea of the Hartford's, only, of course, not so complete a work, which should rest in the pocket of every automobilist. This little leather pocket memorandum book has a picture of the new Pope garage and a plan showing each floor and the special features on the floors, besides which it supplies ten routes to nearby places, printed in such simple form that no one could be lost in making any of the journeys. Added to the other valuable information is a list of the world's automobile records. Altogether it is one of the most complete books of the kind that has been turned out.

Success in manufacture of automobiles will not be found at the end of the rutted road. It is the goal that is reached only by blazing a roadway of your own.

Between Empire, Brighton and Morris Park tracks the Metropolitan district is going to have a glorious plenitude of racing this year. I am glad of it. Nothing stirs your real New Yorker's sporting blood quite so much as a race, and so long as it is a fast

and a close finishing affair he doesn't care whether the racers themselves are men, machines or monkeys. Your New Yorker'll pay his money to see the affair, no matter what it costs him. Get him interested and he'll give you your price for the winner; right here's where the trade in good, old Gotham is going to be benefited by all this racing, for after all the best automobile show in the world is the one which shows exactly what each particular automobile can do, and that's what a race does after you boil the whole thing down. With all this racing and the consequent newspaper furore it is an easy thing to predict that the season of 1905 will be the greatest one the trade in and around New York city has ever seen, and as goes New York so goes the country in matters of this kind.

Nine times out of ten the local "expert" does not know what is the matter with the motor that is brought to him because it won't mote, but he knows enough not to say so.

Whether it was a practical joke played by R. H. Johnson, the military member of the publicity purveying firm of Bruce & Johnson, on the Rough Riders or whether it was just a case of homeopathy to make the alleged deadly automobile act the part of a cure-all conveyance, I don't attempt to say, but no matter what was the reason the result certainly was that in introducing the White steamer equipped as an ambulance in the inaugural parade at Washington the B. & J. people scored in great shape. As the picture elsewhere in this issue shows, the White ambulance with the white cross was given a place of honor along with Brooklyn's crack regiment, the Twen-

ty-third, of which organization Mr. Johnson is an enthusiastic member. As the inaugural this year was a veritable apotheosis of the horse it was a particularly auspicious time for the automobile, and the American automobile at that, to come to the front, and the young men who succeeded in putting it there in such excellent shape are certainly deserving of all the congratulations they received therefor.

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He rode on an aerial car,  
And though he rode not very far,  
It got in its work,  
And he quit with a jerk.  
There are tuberoses now in the jar.

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Suppose some one was to come along and wake you up in the middle of the night with the question: "What are Zamordini Phares?" Now, honestly, could you tell them what they were? It's dollars to doughnuts you couldn't. I was thinking of this when Leon Rubay was showing me those clever acetylene generators wherein the gas is formed by the admission of water through capillary attraction into a chamber filled with ordinary carbide. With this gas burning in a projector equipped with a lenticular lense the result is a flood of light such as it seems almost impossible to believe comes from so small a flame as the gas jet shows. Of course \$190, the price of the particular projector I have reference to, will keep that kind of light giver from ever becoming common; but if I had the money, there's the lamp I'd have on my car, just the same. Of course Mr. Rubay has all kinds and all prices, but the projector de luxe, as he very appropriately calls it, would be the one for yours truly, if, as I said before, I had the \$190 it cost, which, alas, I have not.